जल वैज्ञानीकीय आँकड़ा (अवर्गीकृत) पुस्तक - 2020

HYDROLOGICAL DATA (UNCLASSIFIED) BOOK-2020

(Data Reference Period: 2015-16)



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April, 2020

जल वैज्ञानिकीय आंकड़ा

(अवर्गीकृत)

पुस्तक

HYDROLOGICAL DATA
(UNCLASSIFIED)
BOOK

HYDROLOGICAL DATA DIRECTORATE
INFORMATION SYSTEM ORGANISATION
WATER PLANNING & PROJECTS WING
CENTRAL WATER COMMISSION

New Delhi
April, 2020

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Central Water Commission



FOREWORD

The planning and design of water resources projects require time series data on hydrological aspects. The basic hydrological data of gauge, discharge, silt, sedimentation and water quality are regularly collected at the hydrological observation stations of CWC. Thereafter, the data are transmitted and processed in the CWC field offices who document the authenticated data in the form of Water Year Books, Sediment Year Books and Water Quality Year Books. This publication titled ***"Hydrological Data(Unclassified) Book 2020"*** gives overview of the hydrological data in the unclassified river basins of our country.

A Committee was constituted in CWC to suggest improvements in this publication. I am happy to note that the current publication has improved substantially by including additional aspects like quality charts showing variations across river sites, river flow line diagrams, etc.

The collection, compilation and collation of the material for the publication has been undertaken by the Information System Organization (ISO), CWC, under the overall guidance of Smt. J. Kurian, Advisor (ISO). The Committee for improvement of this publication set up under the Chairmanship of Shri Ravi Shankar, the then Chief Engineer (Planning & Development) has contributed immensely towards its preparation. I would like to place on record my deep appreciation to Shri Ravi Shankar, Smt. J. Kurian and their team for their commendable efforts in bringing out this publication.

I hope this publication would prove useful for research scholars, planners, policy makers and various stakeholders at large. I look forward to suggestions and feedback for further improvement in the content and quality of this publication in its future editions.

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(Rajendra Kumar Jain)
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PREFACE



Water resources planning require time series data on hydrological aspects. Central Water Commission, field Hydrological Observation Divisions located on different river basins collects and processes the basic hydrological data like gauge, discharge, silt, sedimentation and water quality on a regular basis and documents these data in the form of Water Year Book, Sediment Year Book and Water Quality Year Books. Hydrological Data (Unclassified) Book is a compendium of important information of all basins pertaining to Region-III, consolidated at the national level.

This publication presents salient features of all basins of Region-III relating to location, drainage area, soil characteristics, type of industries, principal minerals, rainfall, temperature, type of climate, average annual run-off, seasonal water flow, historical water levels, live storage capacity, annual flow of water into river basins, dependable flow of water in different river basins, ten daily & monthly sediment load for different river basins, critical absolute values of water quality parameter, land use statistics etc.

The present issue of the publication provides updated basin/site-wise data of river basins (Region-III) covering aspects such as location, drainage area, temperature, average run-off, seasonal water flow, historical water levels, average sediment load, water quality parameters and land use statistics.

This publication is intended to provide documentation of available data in the form required by researchers, analysts and policy makers and will prove to be of immense use for them.

Suggestions and feedback for improvement of the publication will be highly appreciated.

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April , 2020

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Executive Summary

The nation can be divided into following three regions; (a) Region-I: Indus basin & other rivers and their tributaries discharging into Pakistan; (b) Region-II: Ganga-Brahmaputra-Meghna basin & other rivers and their tributaries discharging into Bangladesh/Myanmar; and (c) Region-III: Remaining other rivers and their tributaries.

The data of Region-I and II are classified, whereas the data of Region-III is unclassified. The reservoir water level, live storage position, water quality, groundwater and meteorological data for all regions are also unclassified.

The Introductory chapter describes the scope of this publication and gives a complete list of region - III basins. It also gives a brief assessment of water resources and an account of per capita availability of water.

Chapter 2 entitled “Overview of the River Basins (Region – III)” covers 16 basins and describes the salient features of each basin like geographical location, topology, topography, major tributaries, soil characteristics, availability of minerals, major industries, urban centers and important irrigation projects. It also gives an account of average annual flow, estimated utilizable flow and total storage capacity in different river basins.

It also covers drainage area, hydrological observation sites and peak water level in different basins. Annual dependable flow of water at terminal sites of all river basins covered in the publication has been described for the last ten years.

Water quality statistics has been presented as per IS 2296-1992. The tolerance limits of parameters of all tolerance factors of water have been indicated in respect of five classes that have been put to various uses of water. The five classes are as follows: Class A - Drinking water source without conventional treatment but after disinfection, Class B - Outdoor bathing, Class C - Drinking water source with conventional treatment followed by disinfection, Class D - Fish culture and wild life propagation, Class E - Irrigation, industrial cooling or controlled wastes or controlled waste disposal. Season-wise and site-wise detailed information on critical absolute values that decides the range of tolerance limits of water quality for Class A has been presented. Also, site-wise information of maximum and minimum values of water quality parameters during the year 2015-16 and temporal trends of water quality parameters have been presented for pH, Biological Oxygen Demand, Dissolved Oxygen and Total Hardness.

Land use statistics have been presented in the form of land utilization pattern of the river basins (Region - III), gross and net area irrigated by sources and by river basins.

The Appendix contains the tables on Storage capacity by river basin, Salient features of different river basins, Number of hydrological observation sites by basin (Region - III), Important historical observation by sites and river basin, Flow of water by season, site and river basin, Maximum and minimum observed water levels and discharges by site and river basin, Annual dependable flow of water by site and river basin, Monthly average flow per unit drainage area by site and river basin, Time series of Sediment load by site in river basin, Ten-daily and monthly average sediment load by site and river basin, Tolerance limits of selected water quality parameters for inland surface water by its use, Critical absolute values of water quality parameters crossing tolerance limits by season, Maximum and minimum values of water quality parameters by site and river basin, Land utilization pattern by river basin and State, Area irrigated (source wise) in each district of state by river basin and basic parameters of Ground water resource availability, utilization and stage of development .

Chapter 1

Introduction

1.0 Background

1.0.1 Information System Organisation (ISO) of Water Planning & Projects Wing (WP&P) in CWC is the statistical unit of CWC entrusted with the task of compiling data collected by CWC field offices and bringing out publications for backing up data for planning and policy formulation and researchers relating to water resources. Among these publications, the present one is on hydrological data entitled "Hydrological Data (Unclassified) Book".

1.0.2 River management is one of the key issues for political and economic affairs of the country. Planners and policy makers require comprehensive and reliable time series data on hydrological aspects. The primary objective of this publication is to provide data that will help in designing and executing water resource projects in the country.

1.0.3 From the point of view of data dissemination, the nation can be divided into following three regions; (a) Region-I: Indus basin & other rivers and their tributaries discharging into Pakistan; (b) Region-II: Ganga-Brahmaputra-Meghna basin & other rivers and their tributaries discharging into Bangladesh/Myanmar; and (c) Region-III: Remaining other rivers and their tributaries.

The data of Region-I and II are classified, whereas the data of Region-III is unclassified.The reservoir water level, live storage position, water quality, groundwater and meteorological data for all regions are also unclassified. The scope of this publication is limited to data (unclassified) pertaining to the region-III basins only. The river basins (Region – III) for the purpose of this publication are listed below.

Sl. No.	*River Basin*
1	*Mahanadi*
2	*Subernarekha*
3	*Brahmani and Baitarani*
4	*Godavari*
5	*Krishna*
6	*Cauvery*
7	*Pennar*
8	*East flowing rivers between Mahanadi to Pennar*
9	*East flowing rivers between Pennar to Kanyakumari*
10	*Narmada*
11	*Tapi*
12	*West flowing rivers from Tapi to Tadri*
13	*West flowing rivers from Tadri to Kanyakumari*
14	*Mahi*
15	*Sabarmati*
16	*West flowing rivers of Kutch, Saurashtra including Luni*

The descriptions of these river basins (Region-III) are given in Chapter 2.

1.0.4 The nation-wide data collection network of CWC is spread over 1674 hydrological observation (H.O) stations covering both classified and un-classified river basins (as on 30.09.2019 Source: RDC-II Dte,CWC). Out of these operational sites, 570 sites are for measuring Gauge (G) only, 454 sites for Gauge & Discharge (GD), 114 sites for Gauge, Discharge & Quality(GDQ), 47 sites for Gauge, Discharge & Sediment (GDS), and 353 sites for Gauge, Discharge, Sediment & Quality(GDSQ). The distribution of the sites by river basins has been presented in Table 3. In these sites, hydrological data on gauge, discharge, silt, sedimentation, water quality and water flow are collected regularly.

1.0.5 Based on the data collected in the field, three water year books for gauge and discharge, sediment and water quality are prepared by CWC field office at divisional level. All these books along with some relevant land use statistics collected by the Ministry of Agriculture & Farmers Welfare are integrated in this publication.

1.1 Assessment of Water Resources

1.1.1 The annual precipitation including snowfall is the main source of water in India and the average is estimated to be of the order of 4000 cu km. The total water resource potential of the country, which occurs as natural run off in the rivers is estimated at 1,869 cu km considering both surface and groundwater into account. Due to various constraints of topography, uneven distribution of resource over space and time, it has been estimated that only about 1,123 cu km can be put to beneficial use – out of which only 690 cu km is surface water. However, 370 cu km of estimated utilizable surface water comes from the region-III river basins.

1.2 Per Capita Availability of Water

1.2.1 As per the distribution of water resources potential in the country, the national per capita annual availability of water is 1,545 cubic meter (estimated as on 1st March 2011). The estimated per capita average availability during the year 2010 in Brahmaputra system was 13,407 cubic meter while it was as low as 263 cu m in Sabarmati basin. The per capita availability in the country was 1,608 cubic meter during 2010. Any situation of availability of less than 1000 cu meter per capita per year is considered by international agencies as "Water Stressed". Krishna, Cauvery, Subernarekha, Pennar, Mahi, Sabarmati, Tapi, East Flowing Rivers and West Flowing Rivers of Kutch and Saurashtra including Luni are some of the basins, which fall into this category- out of which Cauvery, Pennar, Sabarmati and East Flowing rivers and West Flowing Rivers of Kutch and Saurashtra including Luni facing more acute water scarcity with per capita availability of water less than or around 500 cubic meter. In the shadow of the continued population growth, the water availability projected for the year 2025 is 1,434 cubic meter per capita per year.

This book contains data for 2015-16. Wherever time series data are presented, it covers a period of ten years from 2006-07 to 2015-16.

Chapter 2

Overview of the River Basins (Region-III)

This chapter gives a detailed account of all river basins pertaining to Region-III only. It may be mentioned thatIndus basin & other rivers and their tributaries discharging into Pakistanpertain to Region-I; Ganga-Brahmaputra-Meghna basin & other rivers and their tributaries discharging into Bangladesh/Myanmar pertain to Region-II.Remaining other rivers and their tributaries pertain to Region-III.

- It covers salient features like geographical location, topology, topography, major tributaries, soil characteristics, availability of minerals, major industries, urban centres and important irrigation projects including observation sites. Basin-wise detailed information is presented in Table 2 of Appendix.

- It provides the flow line diagram of the basin which gives a fair idea about the major projects, hydrological observation sites and tributaries of the main river.

- It depicts the annual dependable flow (10%, 25%, 50%, 75%, 90%) at terminal sites of the basin. Basin-wise detailed information is presented in Table 7 of Appendix.

- It gives the season-wise (monsoon, winter, summer) temporal trends of water quality parameters viz. pH, BOD (Biological Oxygen Demand), DO(Dissolved Oxygen) and Total Hardness at selected sites of the basins. Basin-wise detailed information is presented in Table 13 of Appendix.

- It provides information on land use statistics viz. land utilisation pattern (forest, fallow land, cropped area etc.), Gross and Net area irrigated of the basin. Basin-wise detailed information is presented in Table 14, Table 15 and Table 16 of Appendix.

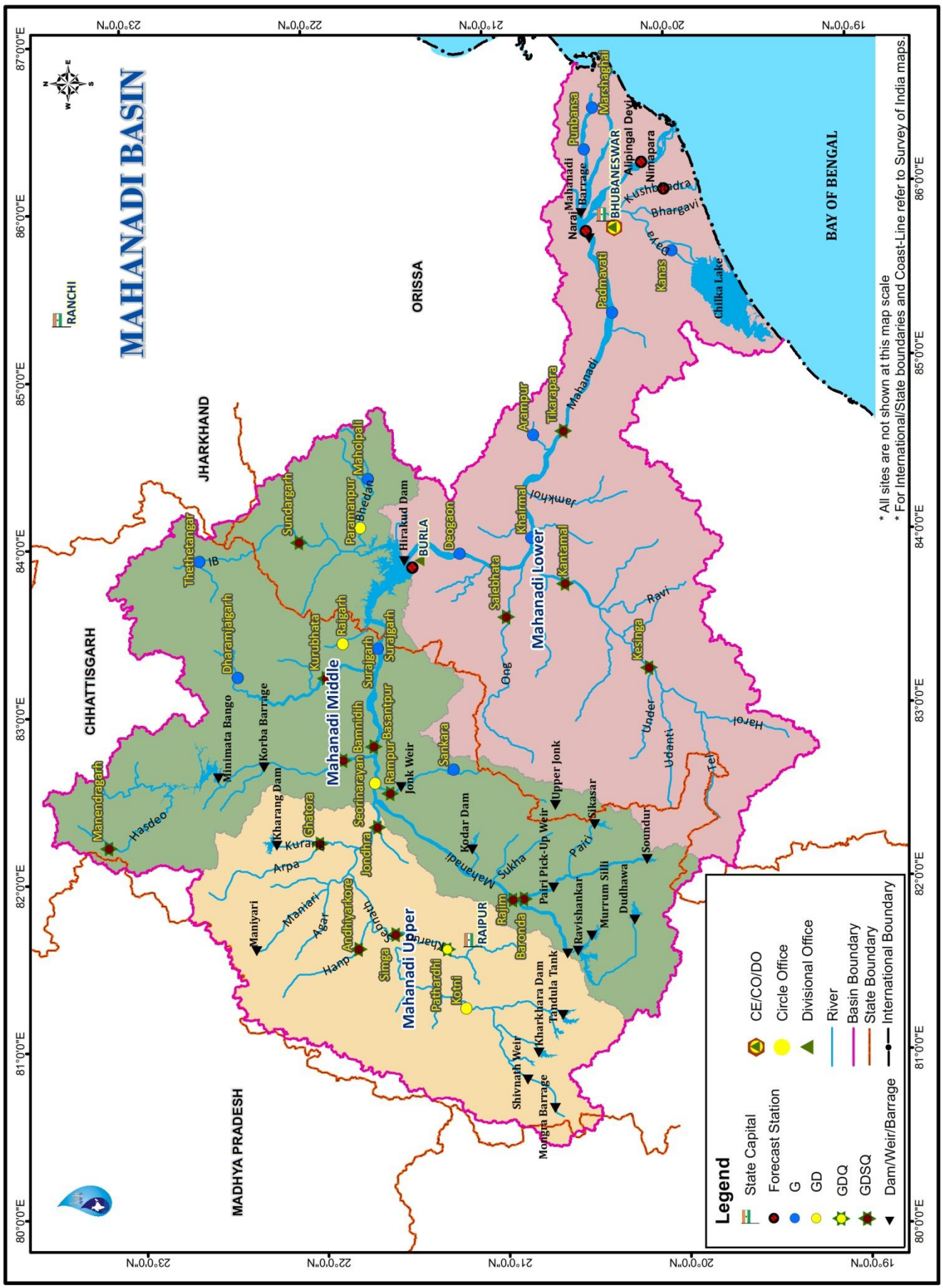
- It provides information on Dynamic Ground water resources of Unclassified basins of India (in Ham) as on March 2017 in Table 17 of Appendix.

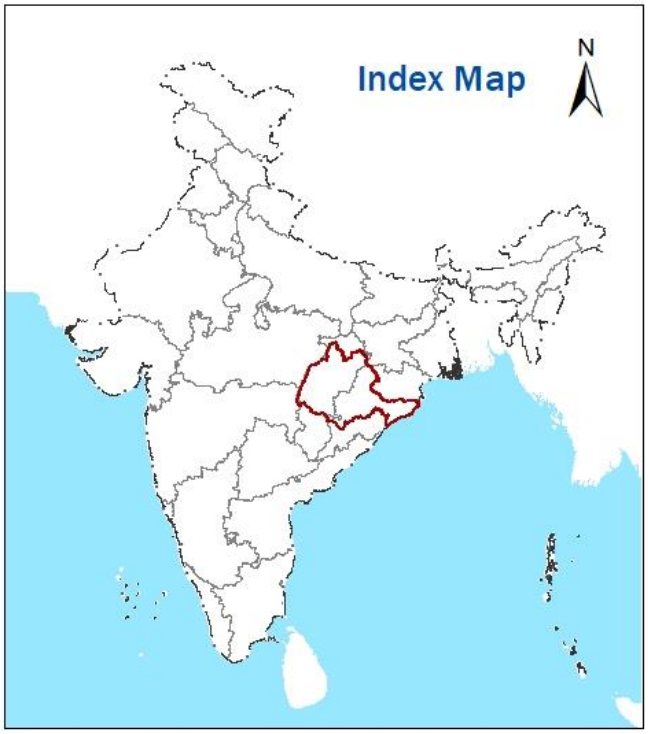
2.1 MAHANADI BASIN

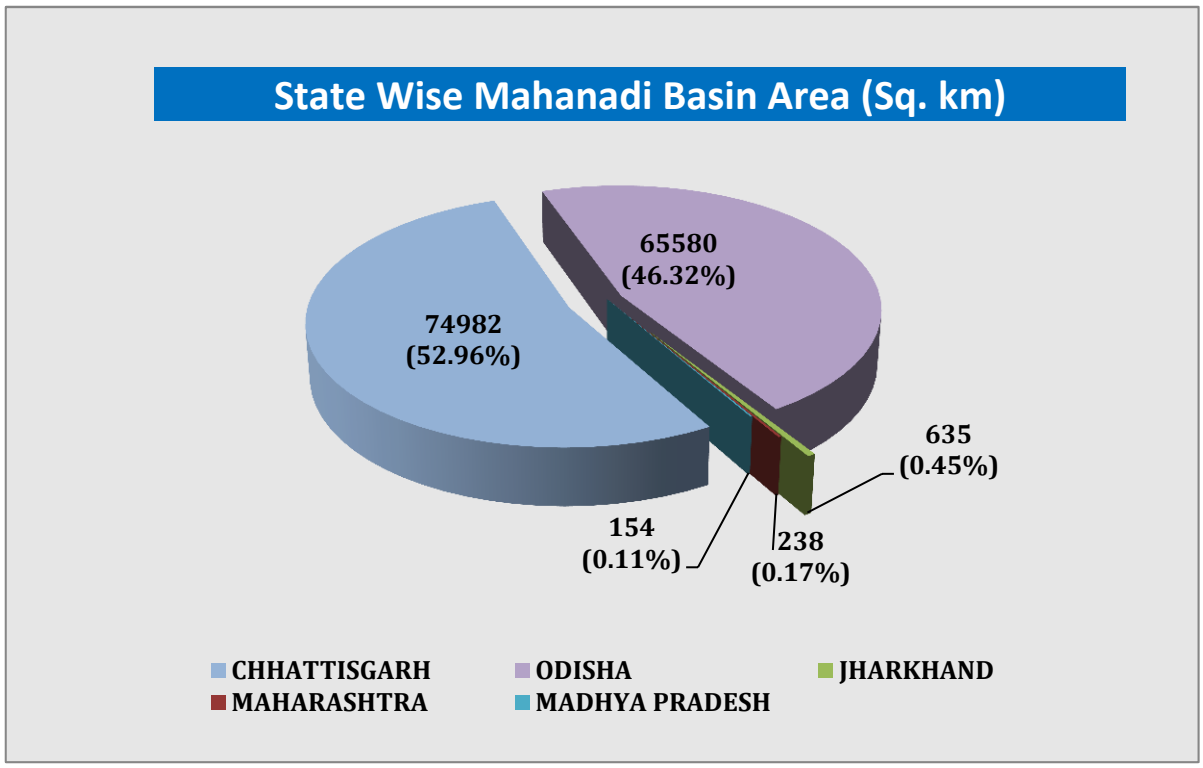
Location: The basin is physically bound in the north by Central India hills, in the south and east by the Eastern Ghats and in the west by Maikala hill range. The Chiroli Hills form the watershed dividing the Wainganga valley from the Mahanadi Basin, the upper portion of which is designed as the Chhattisgarh Basin. The Mahanadi basin lies encompassed within geographical co-ordinates of $80^0$28' to $86^0$43' east longitudes and $19^0$8' to $23^0$32' of north latitudes running a total length of about 851 km. The total catchment area of the basin is 141589 sq km which is nearly 4.3% of the total geographical area of the country. The basin extends over Chhattisgarh and Odisha and comparatively smaller portions of Madhya Pradesh, Jharkhand and Maharashtra.

The river Mahanadi is one of the major inter-state east flowing rivers in peninsular India. It originates at an elevation of about 442 metre above Mean Sea Level (msl) near Farsiya village near Nagri town in Dhamtari district of Chhattisgarh. The total length of the river from its origin to confluence at the Bay of Bengal is about 851 km, of which 357 km is in Chhattisgarh and the balance 494 km in Odisha. During its traverse, a number of tributaries join the river on both the banks. There are 14 major tributaries of which 12 join upstream of Hirakud reservoir and 2 downstream of it.

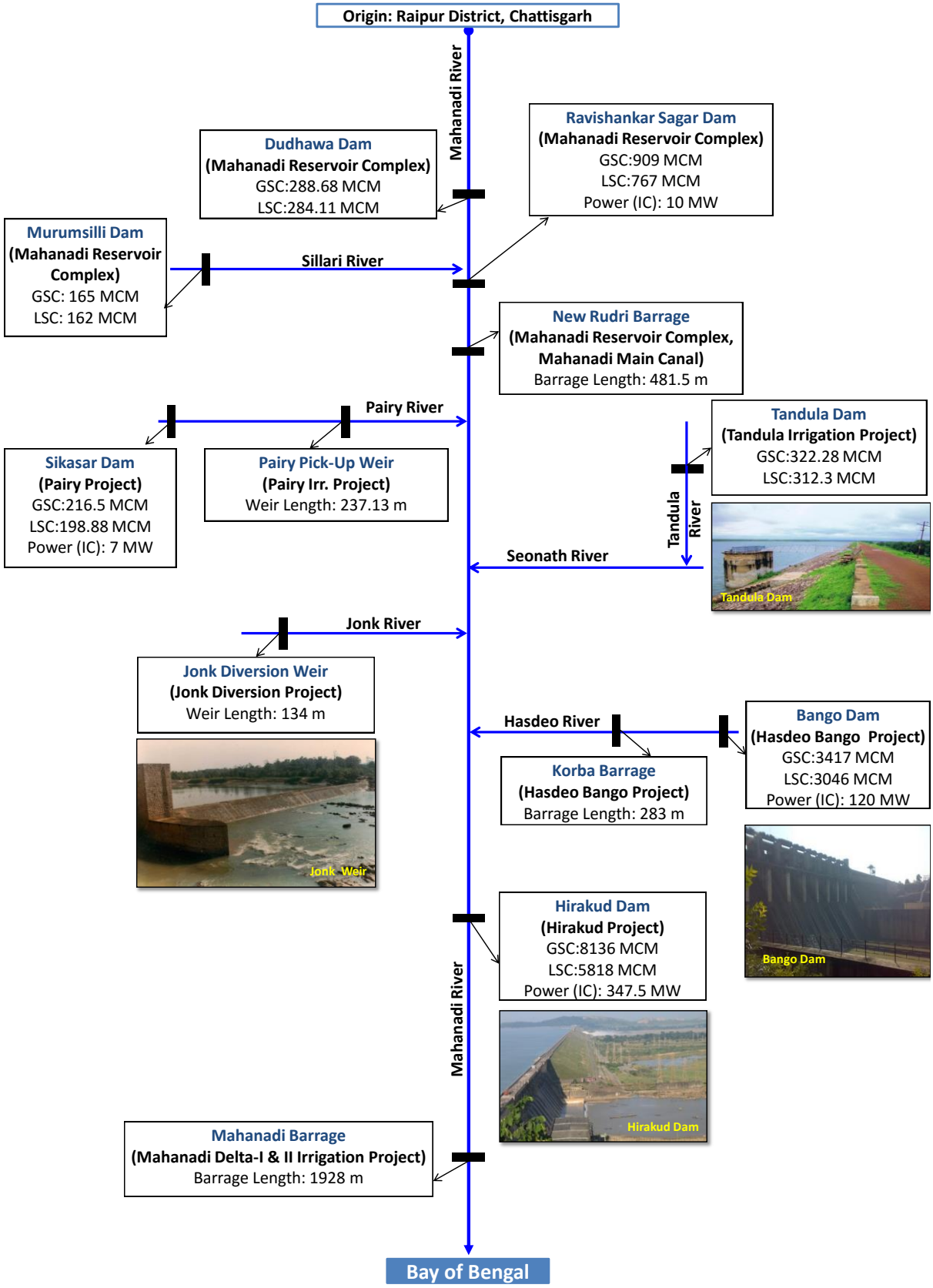
On the left bank, six tributaries namely the Seonath, the Hasdeo, the Mand, the Ib, the Kelo and Borai drain into main channel upstream of Hirakud reservoir. On the right bank six tributaries namely the Pairi, the Jonk, the Sukha, Kanji, the Lilar and the Lath join upstream of Hirakud reservoir and two tributaries namely Tel and Ong join downstream of it. The three major tributaries namely the Seonath and the Ib on the Left Bank and the Tel on the Right Bank together constitute nearly 46.63% of the total catchment area of the river Mahanadi. The Seonath, which is the largest tributary of Mahanadi, rises from an elevation of 533 metrein village Kotgai, District Durg (Chhattisgarh) and drains three districts of Chhattisgarh namely Durg, Rajnandgaon and Bilaspur. The Tel, which is the second largest tributary of Mahanadi River, rises from an elevation of 700 metrein village Jorigam of Nabarangpur district of Odisha and drains five districts of Odisha namely Nabarangpur, Kalahandi, Bolangir, Boudh and Kandhamal. The Ib, which is the third largest tributary of Mahanadi, rises from an elevation of 762 metrein village Pandrapat, District Raigarh (Chhattisgarh) and drains Raigarh and Jashpur districts of Chhattisgarh, along with two districts of Odisha, namely Sundergarh and Sambalpur. The monsoon is the principal rainy season, when over 75% of the annual rainfall is received over a major portion of the basin with July/August as the rainiest month. The average annual rainfall of the basin is of the order of 1400 mm.


MAHANADI BASIN
BAY OF BENGAL
ORISSA
JHARKHAND
CHHATTISGARH
MADHYA PRADESH
RANCHI
RAIPUR
BHUBANESWAR
Mahanadi Upper
Mahanadi Middle
Mahanadi Lower
Hirakud Dam
BURLA
Kharang Dam
Jonk Weir
Kodar Dam
Pairi Pick-Up Weir
Upper Jonk
Shivnath Weir
Mongra Barrage
Khirkhara Dam
Pandula Tank
Mahanadi Barrage
Chilika Lake
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
Legend
State Capital
Forecast Station
G
GD
GDQ
GDSQ
Dam/Weir/Barrage
CE/CO/DO
Circle Office
Divisional Office
River
Basin Boundary
State Boundary
International Boundary


Index Map
N


State Wise Mahanadi Basin Area (Sq. km)
65580
(46.32%)
74982
(52.96%)
635
(0.45%)
154
(0.11%)
238
(0.17%)
CHHATTISGARH
ODISHA
JHARKHAND
MAHARASHTRA
MADHYA PRADESH

Mahanadi River Flow Line Diagram



2.1.1 Irrigation Projects: The Major Projects namely Tandula, Mahanadi main Canal, Hirakud Dam, Kharang Tank, Manairi Tank, Hasdeo Bango Dam, Tairi, Kodar, Salaki, Ong Diversionand Sunder Dam fall in the catchment areas of the river basin.

2.1.2 Hydrological Observation Sites: The Central as well as the State Governments carry out periodic measurements of hydrological observations. The CWC maintains 46 sites in the basin out of which Gauge in 40 sites and Discharge in 21 sites are made. In 18 stations, sediment observations are also carried out (as per 2015-16 data).

2.1.3 Peak Water Level: There are 20 sites in the basin for which historical observations are given for the reference period 2015-16. The maximum drainage area 1,24,450sq km is covered by Tikrapara site in the basin while Mahendragarh site covers minimum drainage area i.e. 1,100 sq km. The maximum stage of peak water i.e. 420.44 metre is observed at Mahendragarh site on 12.07.1990. On the other hand, Tikrapara site has registered minimum peak water level i.e. 74.57 metre on 10.09.2011 (Ref. Table 4).

2.1.4 Water Quality Statistics: As per IS 2296-1992, the tolerance limits of parameters of all polluting factors of water in have been indicated in the Tables-11 in respect of the following five classes that have been formed according to various uses of water.

Class A: Drinking water source without conventional treatment but after disinfection
Class B: Outdoor bathing
Class C: Drinking water source with conventional treatment followed by disinfection
Class D: Fish culture and wild life propagation
Class E: Irrigation, industrial cooling or controlled wastes or controlled waste disposal.

Considering importance of water quality, an attempt has been made to present seasonwise and site-wise detailed information on critical absolute values that are outside the range of the tolerance limits of water-quality for class-A.These values of water quality parameters have been presented in Table 12.

Site-wise information on maximum and minimum values of water quality parameters during the year 2015-16 for reviewing the kind of water being discharged/ supplied for different purposes have been presented in Table 13.

Temporal trends of water quality parameters for the Mahanadi river basin are given below.

Basin: Mahanadi (Water Quality Parameter:pH)

Fig 2.1.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Mahanadi Basin

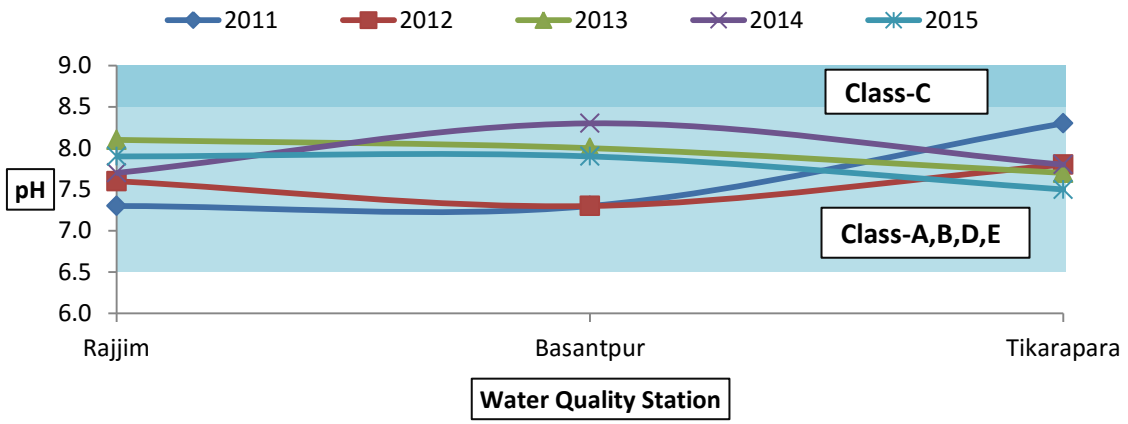


Fig 2.1.2 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for pH at Mahanadi Basin

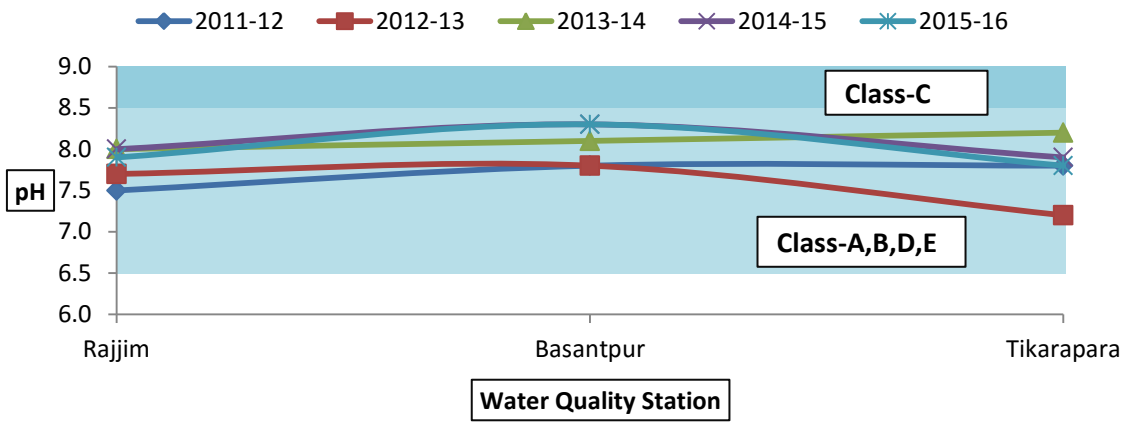
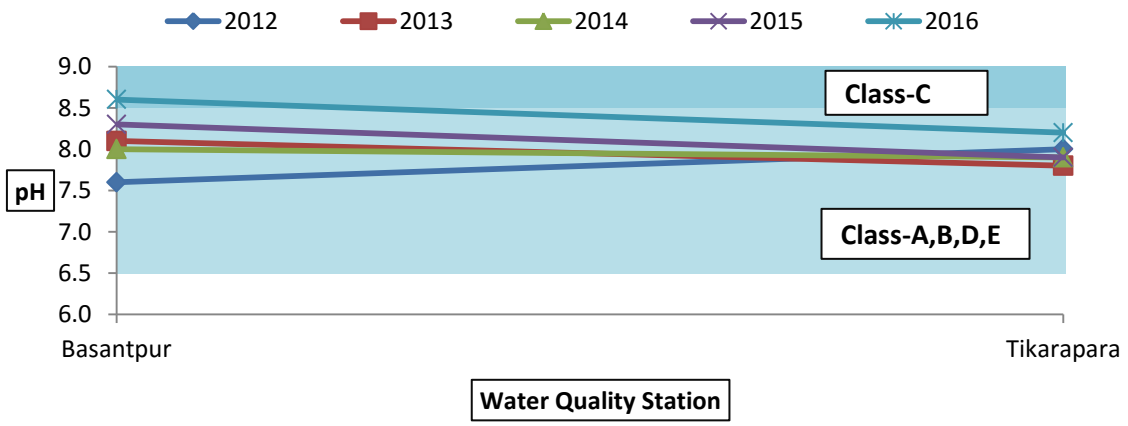


Fig 2.1.3 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for pH at Mahanadi Basin



Basin: Mahanadi (Water Quality Parameter : Biological Oxygen Demand)

Fig 2.1.4 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Mahanadi Basin

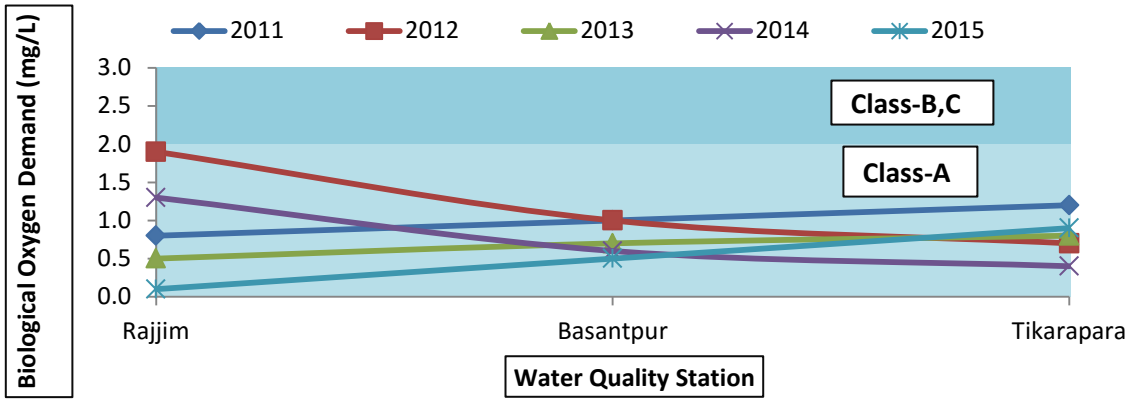


Fig 2.1.5 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for BOD at Mahanadi Basin

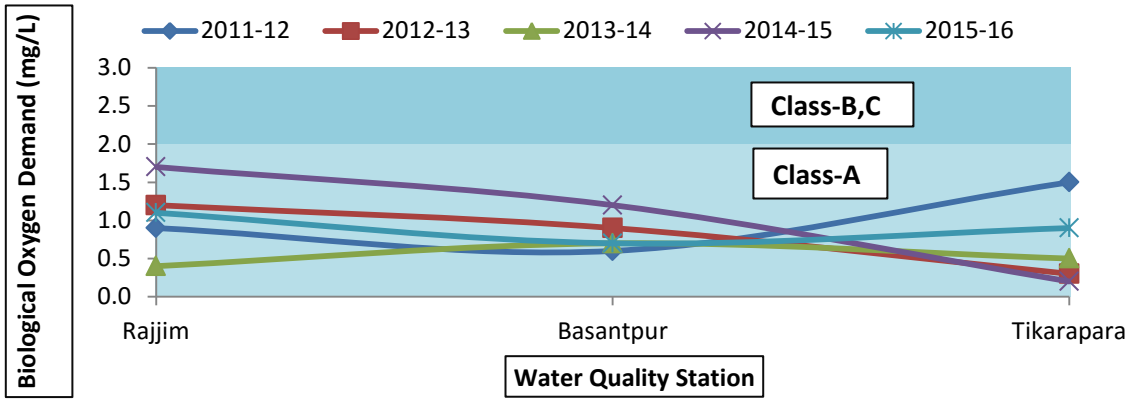
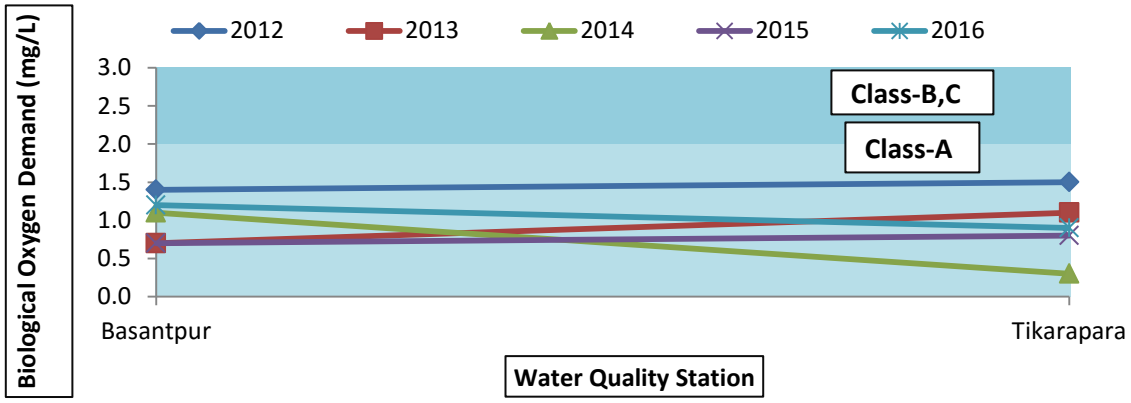


Fig 2.1.6 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for BOD at Mahanadi Basin



Basin: Mahanadi (Water Quality Parameter : Dissolved Oxygen)

Fig 2.1.7 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for DO at Mahanadi Basin

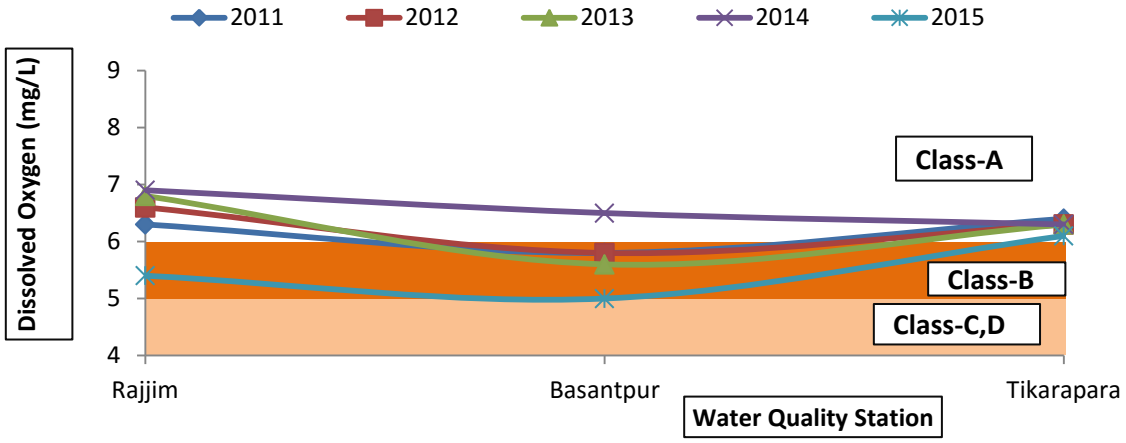


Fig 2.1.8 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for DO at Mahanadi Basin

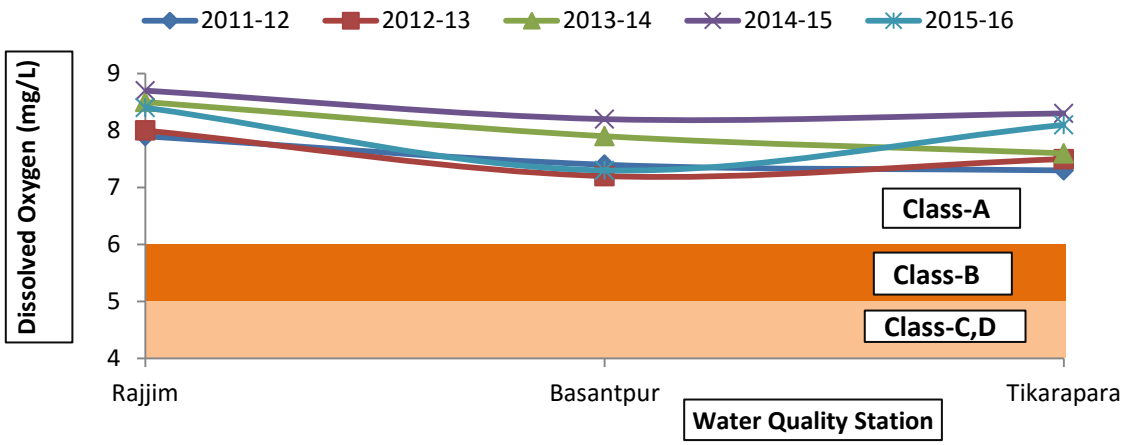
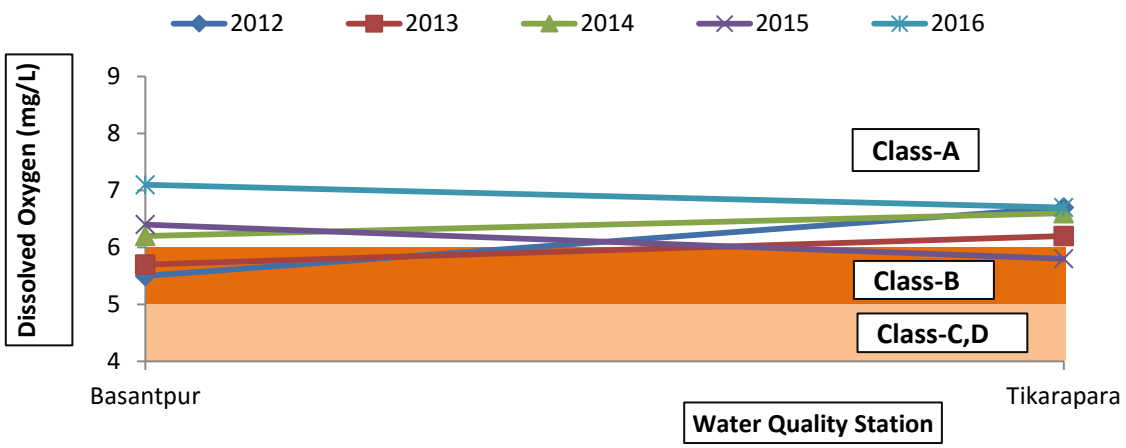


Fig 2.1.9 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for DO at Mahanadi Basin



Basin: Mahanadi (Water Quality Parameter : Total Hardness)

Fig 2.1.10 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at Mahanadi Basin

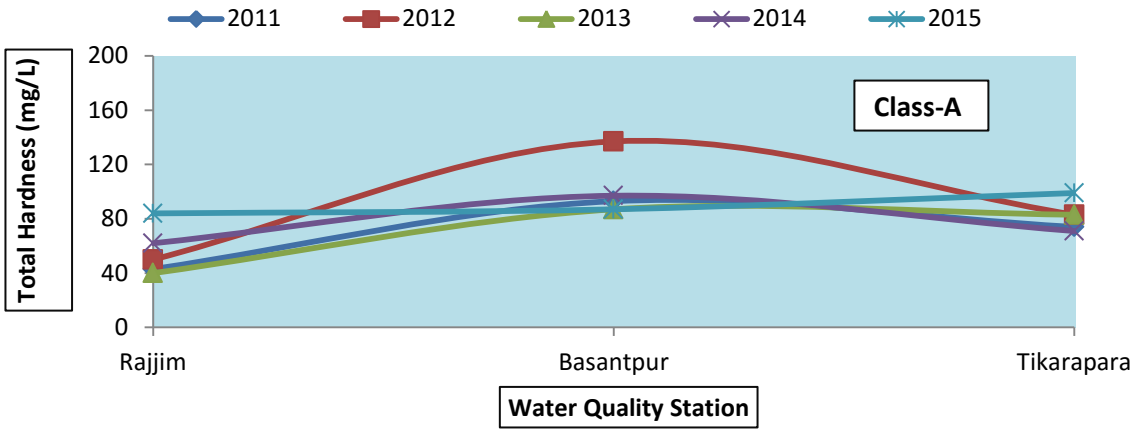


Fig 2.1.11 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for Total Hardness at Mahanadi Basin

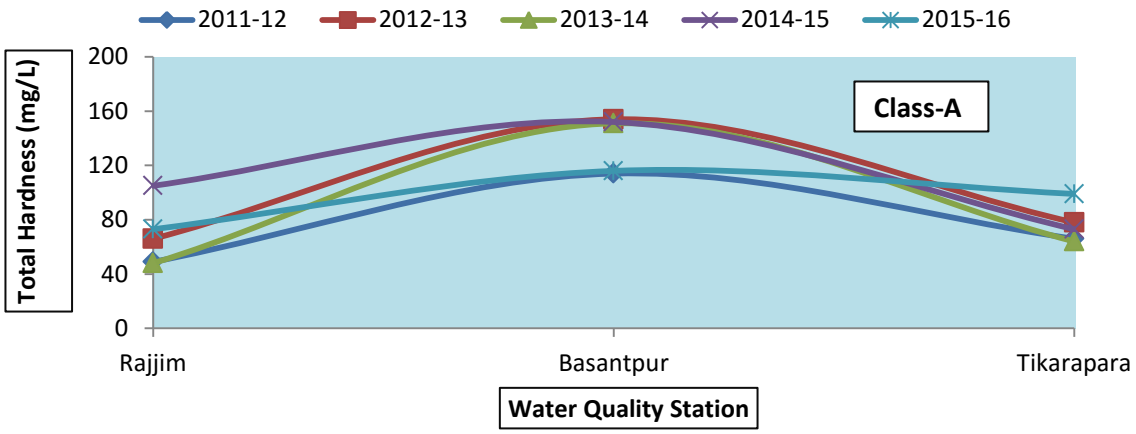
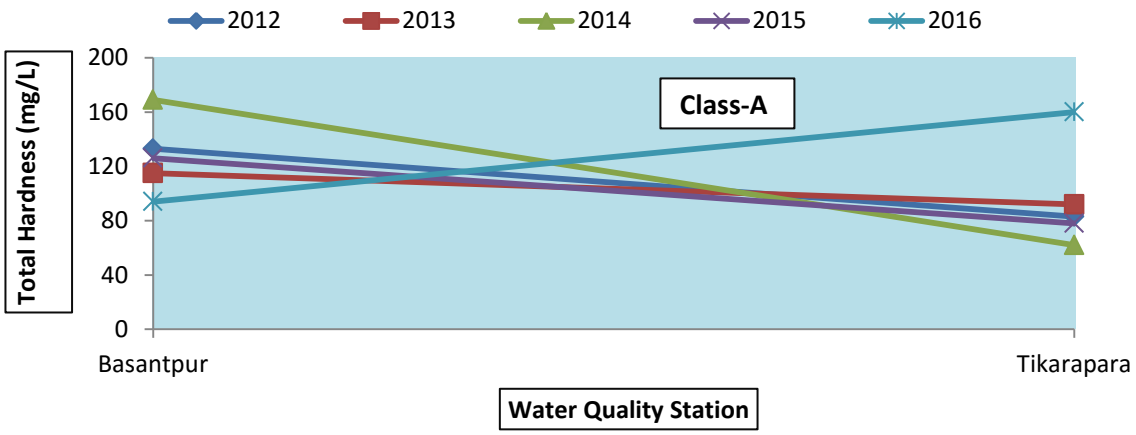


Fig 2.1.12 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for Total Hardness at Mahanadi Basin

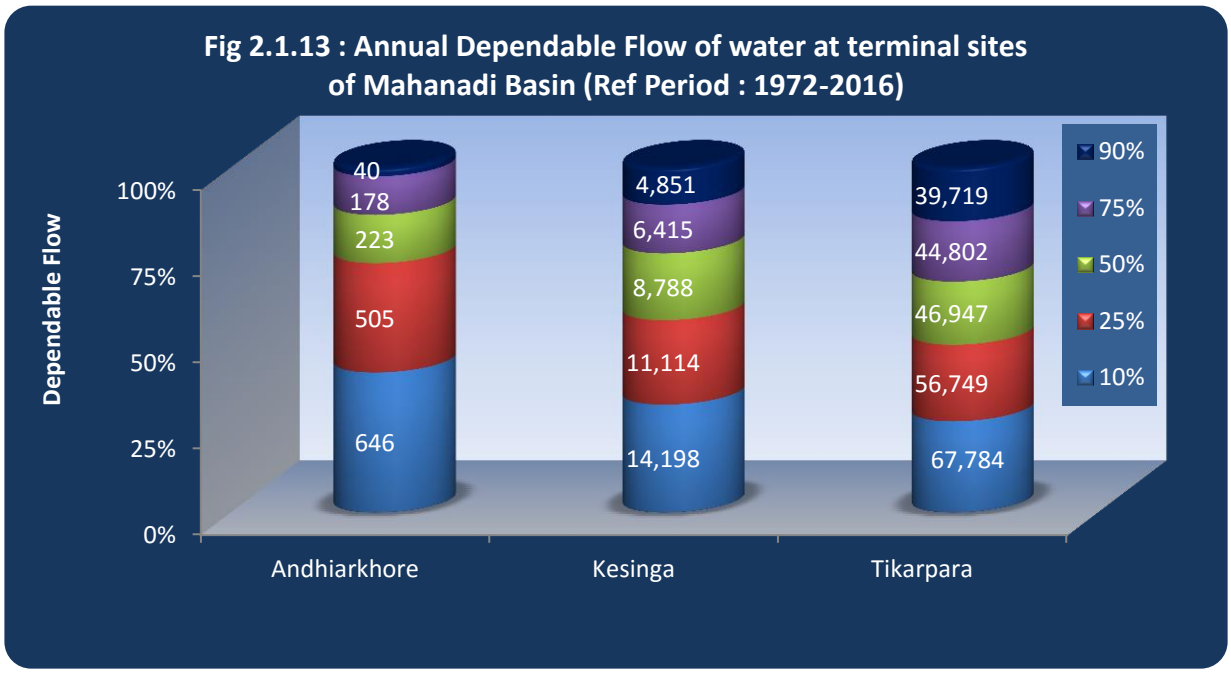


2.1.5 Availability of required amount of water is of paramount importance for any plan or project in water sector for irrigation etc. With this view Table 7 has been presented. It provides dependable flow of water at 10 equal percentile levels for each site. The percentiles have been calculated taking into consideration the last 30 years period (1986 to 2016) of releases of water from the sites. The following pages will graphically reveal the annual dependable flow (10%, 25%, 50%, 75%, 90%) for the three terminal sites of Non-classifed river basins.

Table 2.1.1: Annual Dependable Flow Of Water at Terminal Sites Of Mahanadi Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ANDHIARKHORE	06/1986 To 05/2016	646.30	504.80	222.72	177.69	39.72
2	KESINGA		14198.29	11114.42	8788.32	6414.94	4851.35
3	TIKARPARA		67784.13	56748.93	46947.24	44801.64	39718.71

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar



2.1.6 Land Use Statistics: Land use pattern is a fairly useful indicator in understanding the environmental set up, infrastructural facilities and climatic conditions of an area. The land use pattern is an outcome of the interaction and interplay of the various physical conditions of the area. It gives not only the land coverage but also an insight into the nature of environmental degradation in the catchment area of the basins. Hence it is considered very important in the environmental study of any area. Various Government Departments for their respective administrative units such as Blocks/Tehsils/Districts mostly compile the information. But information is not available for districts/areas under different basins. In this issue land use statistics are confined to analysis of information at the state and basin-wise level. The basin wise land utilisation has been computed as sum total of land use for different classifications in the area of district in a particular state falling within a basin. The data on district and state-wise land use pattern as published by the Directorate of Economics and Statistics, Department of Agriculture & Co-operation, Ministry of Agriculture has been used for the purpose.The data has been classified into (i) forest area (ii) area not available for cultivation (iii) other uncultivated lands excluding fallow land (iv) fallow land (v) net area sown (vi) area sown more than onceand (vii) total cropped area.

The land utilisation pattern by district of each basin is presented in Table 14 for the river basins (Region-III). These basins cover approximately 1138thousand sq. kilometersarea of the states as reported land utilized area.

The land use classification reported during 2015-16as per Ministry of Agriculture for the State is adopted for the catchment area of seventeen river basins(Region-III). The district-wise area under catchment of the basin is reported by India-WRIS and land use under forest coverage, not available for cultivation, other uncultivated land, fallow land and net area shown under the river basin have been indicated under land use statistics. Gross Area Irrigated and net area irrigated within the river basins by source such as canals, tanks, wells and other sources are presented in table 15.Table2.1.2 to Table 2.1.4 given belowpresent an overall picture of the basins combined land use pattern, gross and net area irrigated by different sources like Canals, Tanks, Wells, etc.

TABLE 2.1.2: LAND UTILISATION PATTERN OF MAHANADI AND ALL RIVER BASIN (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Mahanadi	107,783.28	28,999.09	14,544.24	11,337.23	10,398.15	42,504.56	8,646.43	51,151.00
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.1.3: GROSS AREA IRRIGATED BY SOURCES OF MAHANDI AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Mahanadi	11,591.13	941.13	12,532.26	379.19	4,736.29	142.74	4,879.03	342.00	18,132.49
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.1.4: NET AREA IRRIGATED BY SOURCES OF MAHANADI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Mahanadi	6,135.93	0.76	6,136.69	241.82	2,634.74	90.44	2,725.18	6,122.11	15,225.80
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.1.7 Urban Centres: Three important urban centes in the basin are Raipur, Durg and Cuttack.

2.1.8 Industries: Mahanadi, because of its rich mineral reserve and adequate power resource, has a favorable industrial climate. The important industries presently existing in the basin are iron and steel plant, aluminum factories, paper mill, sand and cement industries.

2.1.9 Minerals: The important minerals found in the basin are Iron Ores, Coal, Lime stone, Quartzite, Copper Ores, Silver, Lead, Mica, Bauxite, Galena and Graphite.

2.2 SUBERNAREKHA BASIN

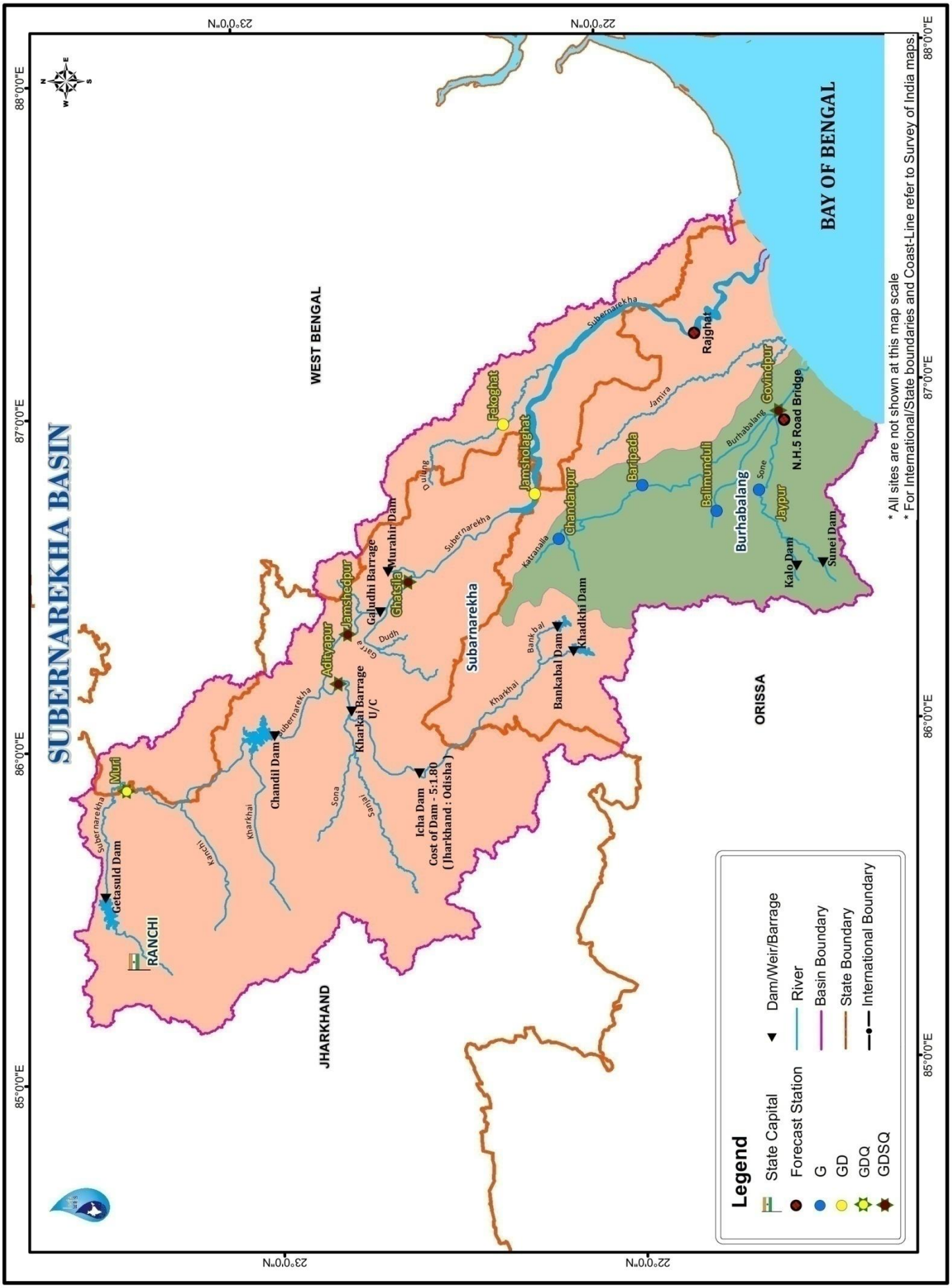
Location: The Subernarekha is one of the longest east flowing inter-state rivers. It covers large areas of Jharkhand and some parts of Odisha and West Bengal. The basin lies between north latitudes of $21^0$15' to $23^0$34' and east longitudes of $85^0$8' to $87^0$32' situated in the northeast corner of the peninsular India. It is bound on the north-west by the Chhotanagpur Plateau, on the south by Baitarani basin and in the south-east by the Bay of Bengal. This river originates near Nagri village in Ranchi district of Jharkhand at an elevation of 600 metre. The total length of the river is about 395 km. Its tributaries are Kanchi, Kharkai, Karkari, Raru, Garru and Dulang. The basin is generally influenced by South-West monsoon, which begins in the month of June and extends upto October.

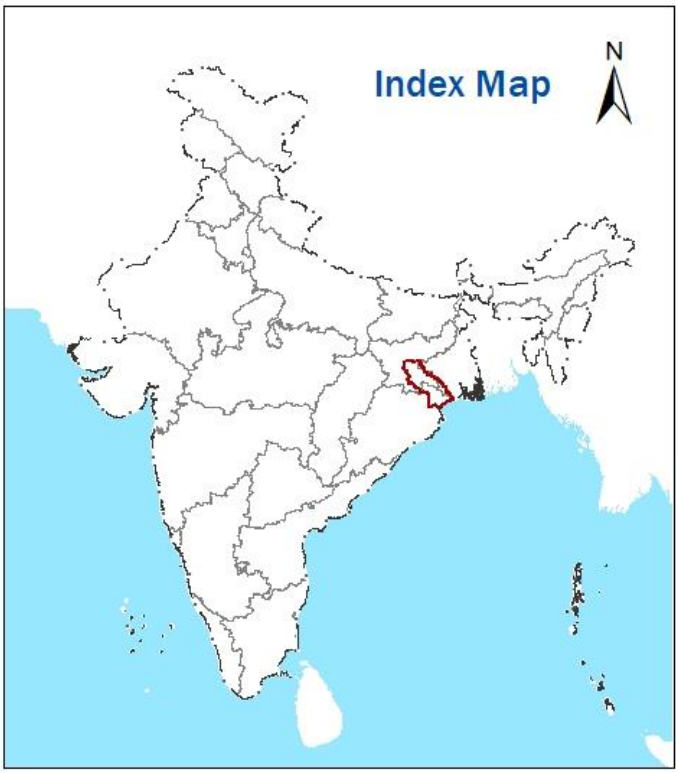
2.2.1 Irrigation Projects: Kanchi irrigation schemes (major), Sunei irrigation project (major), Khadkhi Irrigation Project (medium) are theprominent projects in the basin.

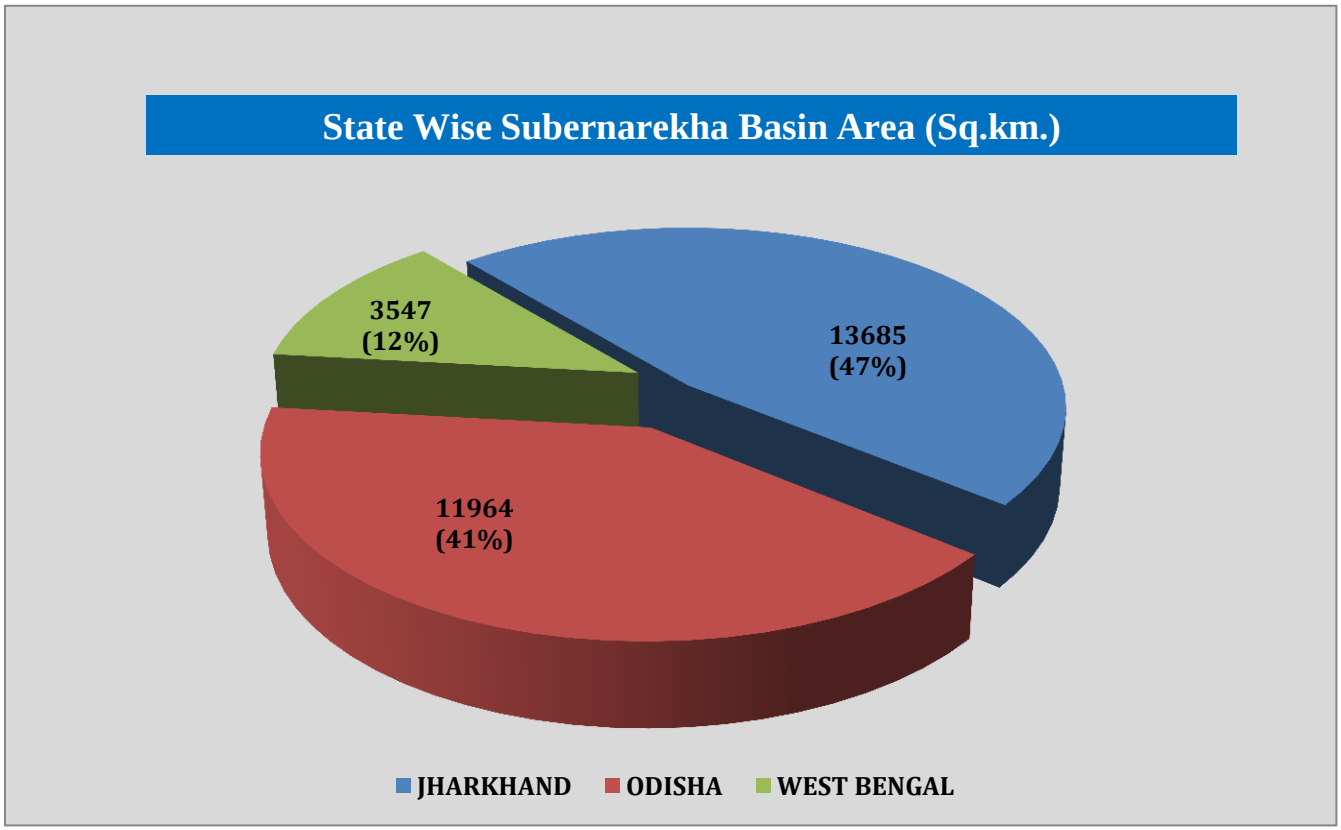
2.2.2 Hydrological Observation (H.O.)Sites: There are 12 H.O. sites out of which at 4 sites (at Ghatsila, Govindpur, Jamshedpur and Adityapur) the data on gauge, discharge, sediment and water quality obseravations are collected. In one site, at Muri, data collected pertains to observations on gauge, discharge and water quality. At site Fekoghat and jamsholaghat, data are collected for gauge, discharge. Besides these sites, there arefive sites where only Gauge related data are collected (as per 2015-16 data).

2.2.3 Peak Water Level: This basin contains the information of 9 sites and there is a vast variation in peak water level,maximumof 237.50metre to minimum of 8.90 metre during the reference period 2015-16 (Ref. Table 4).

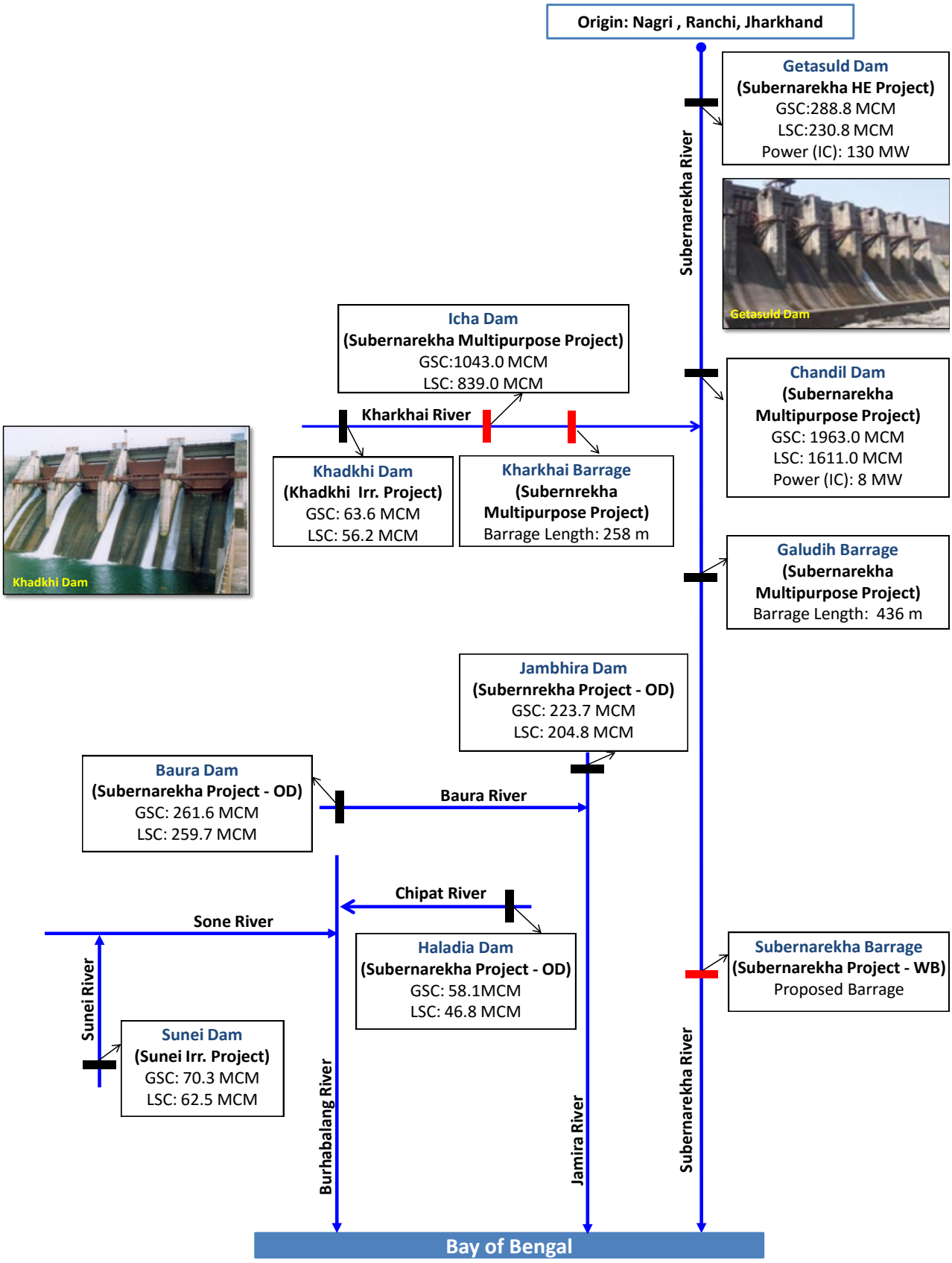
2.2.4 Water Quality: Temporal trends of water quality parameters viz. pH,BOD,DO, Total hardness are given below for three sites of Subernarekha basin (Fig 2.2.1 to Fig 2.2.12).


SUBERNAREKHA BASIN
WEST BENGAL
JHARKHAND
ORISSA
BAY OF BENGAL
Subarnarekha
Getasuld Dam
Muri
RANCHI
Chandil Dam
Kharkai Barrage U/C
Icha Dam
Cost of Dam - 5:1.80
(Jharkhand : Odisha)
Galudhi Barrage
Murahir Dam
Chatsila
Jamshedpur
Adityapur
Bankabal Dam
Khadkhi Dam
Fakeghat
Jamsholaghat
Chandanpur
Baripada
Balimunduli
Burhabalang
Jaypur
Kalo Dam
Sunei Dam
N.H.5 Road Bridge
Govindpur
Rajghat
Jamira
Burhabalang
Sone
Katranalia
Bankbal
Kharkhai
Dulung
Dudh
Garra
Kanchi
Sona
Sankh
Legend
State Capital
Forecast Station
G
GD
GDQ
GDSQ
Dam/Weir/Barrage
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.


Index Map
N


State Wise Subernarekha Basin Area (Sq.km.)
3547
(12%)
13685
(47%)
11964
(41%)
JHARKHAND
ODISHA
WEST BENGAL

Subernarekha River Flow Line Diagram



Basin: Subernarekha (Water Quality Parameter : pH)

Fig 2.2.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Subernarekha Basin

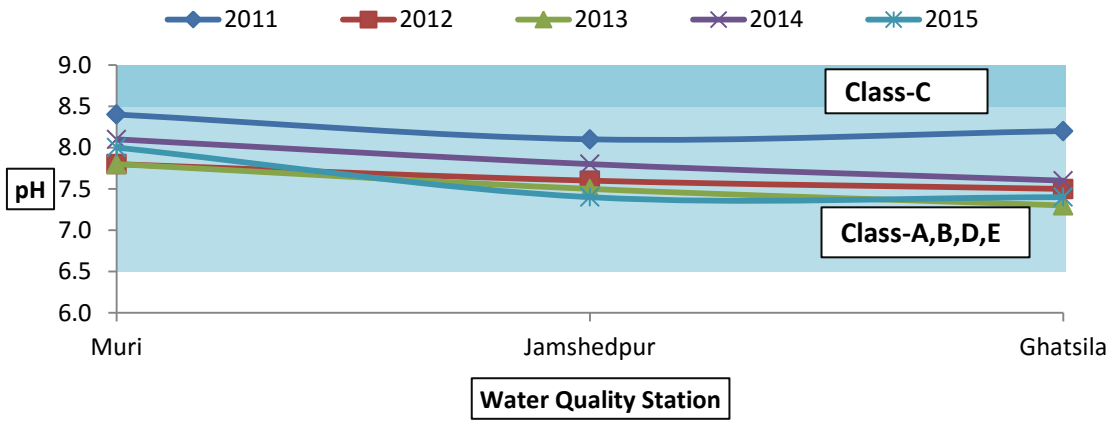


Fig 2.2.2 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for pH at Subernarekha Basin

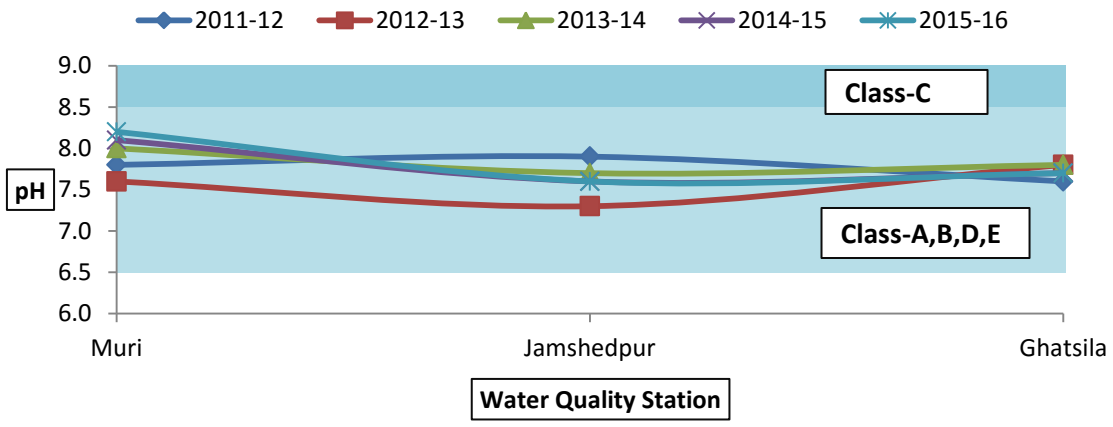
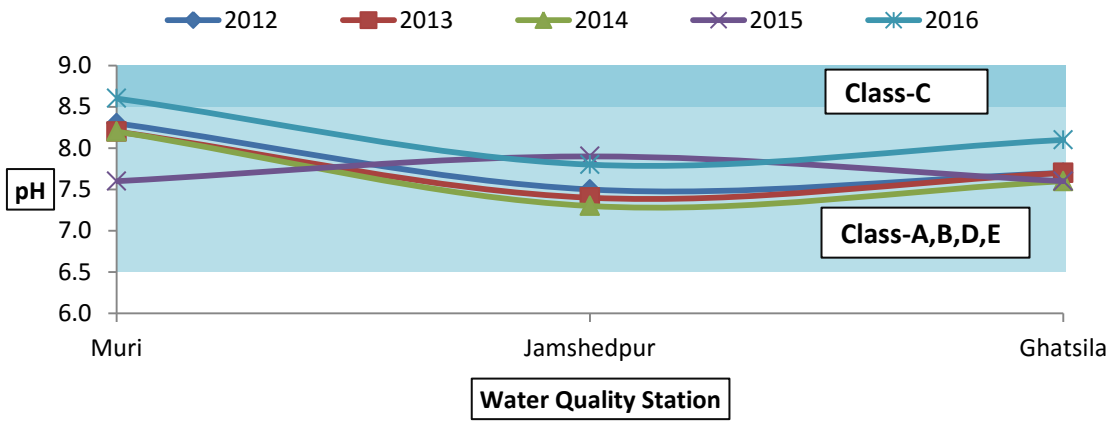


Fig 2.2.3 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for pH at Subernarekha Basin



Basin: Subernarekha (Water Quality Parameter : BOD)

Fig 2.2.4 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Subernarekha Basin

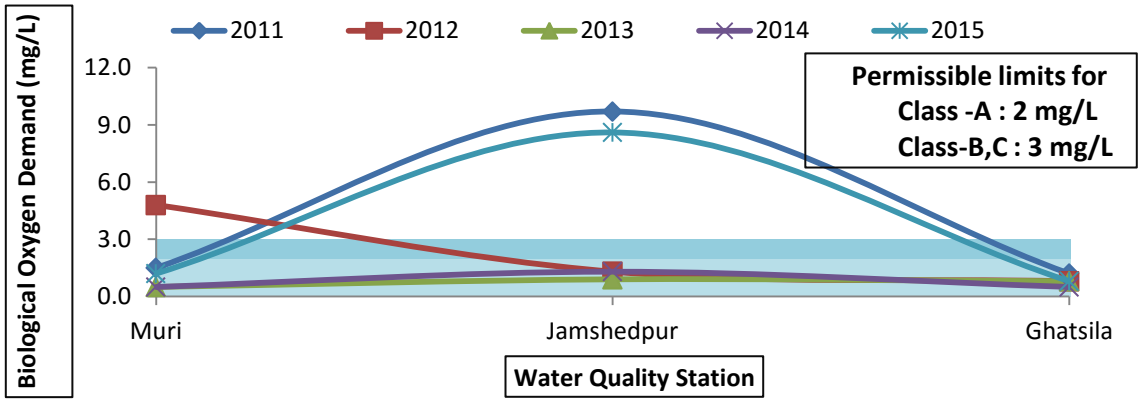


Fig 2.2.5 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for BOD at Subernarekha Basin

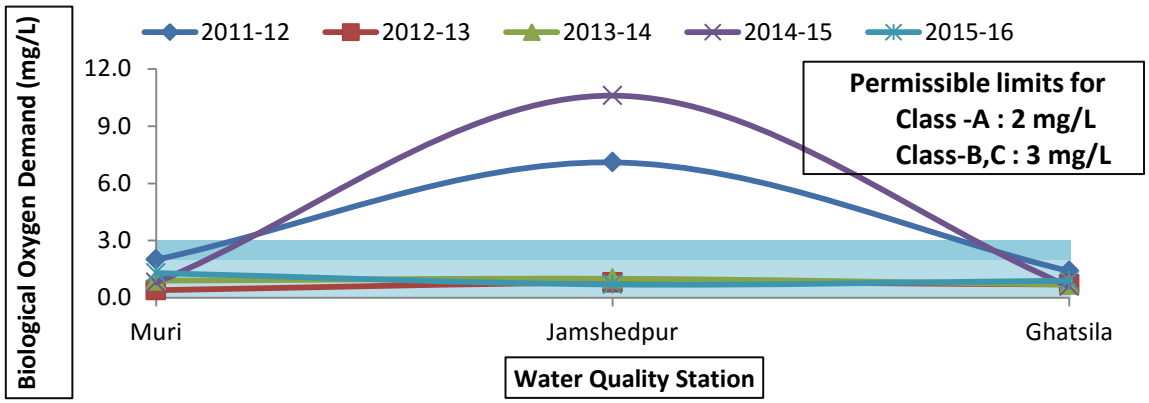
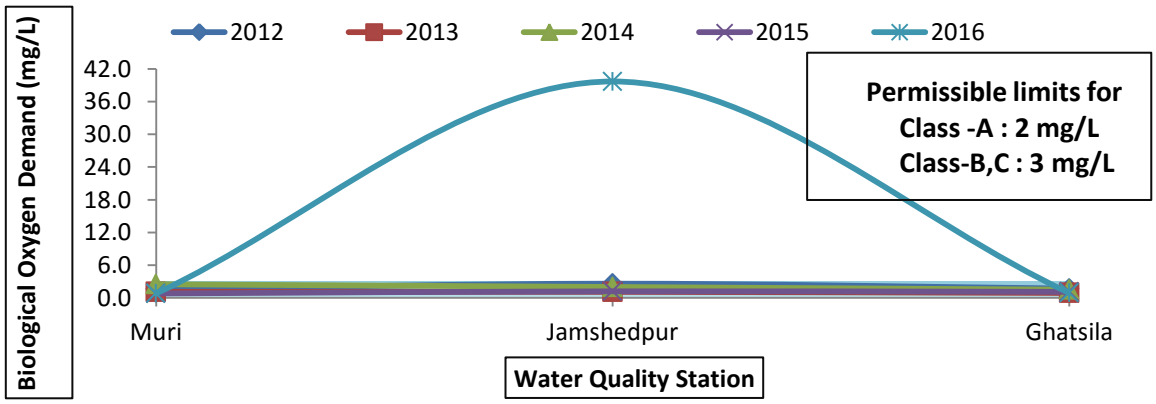


Fig 2.2.6 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for BOD at Subernarekha Basin



Basin: Subernarekha (Water Quality Parameter : Dissolved Oxygen)

Fig 2.2.7 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for DO at Subernarekha Basin

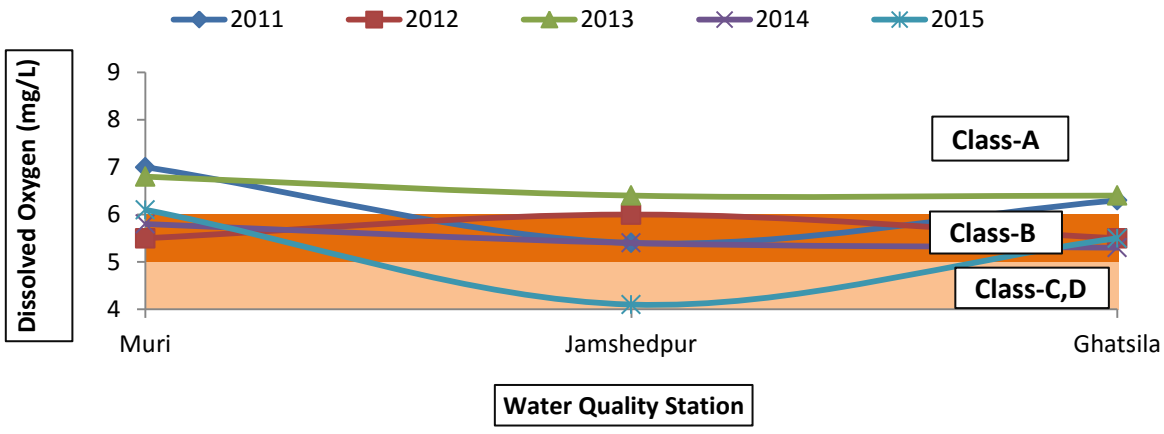


Fig 2.2.8 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for DO at Subernarekha Basin

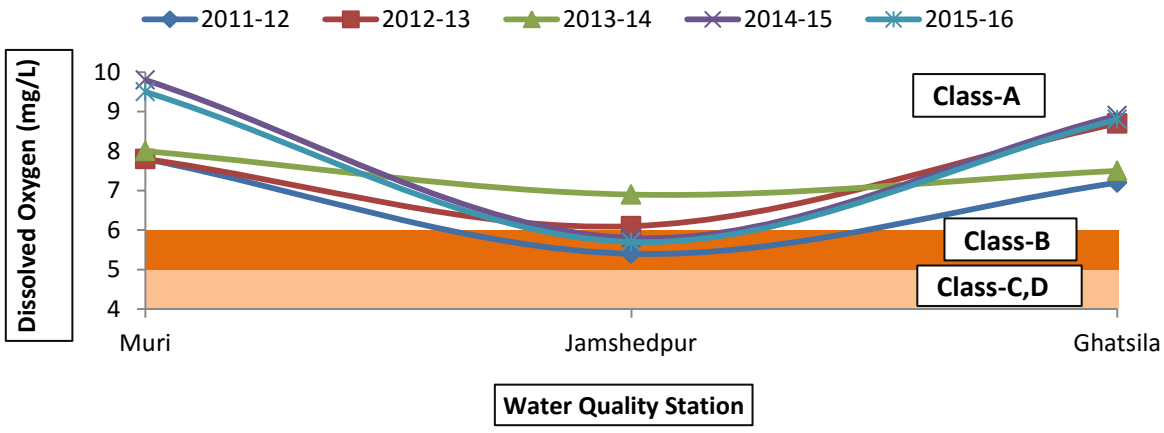
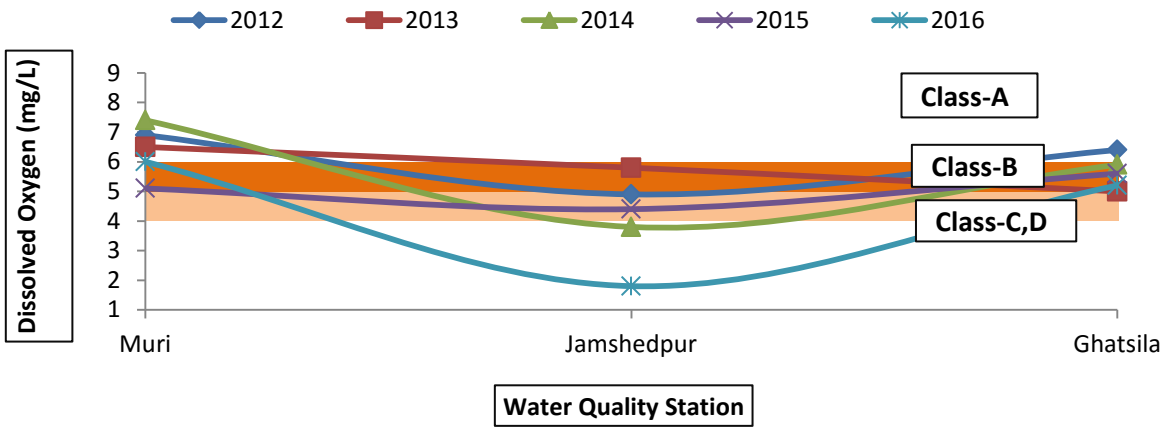


Fig 2.2.9 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for DO at Subernarekha Basin



Basin: Subernarekha (Water Quality Parameter : Total Hardness)

Fig 2.2.10 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at Subernarekha Basin

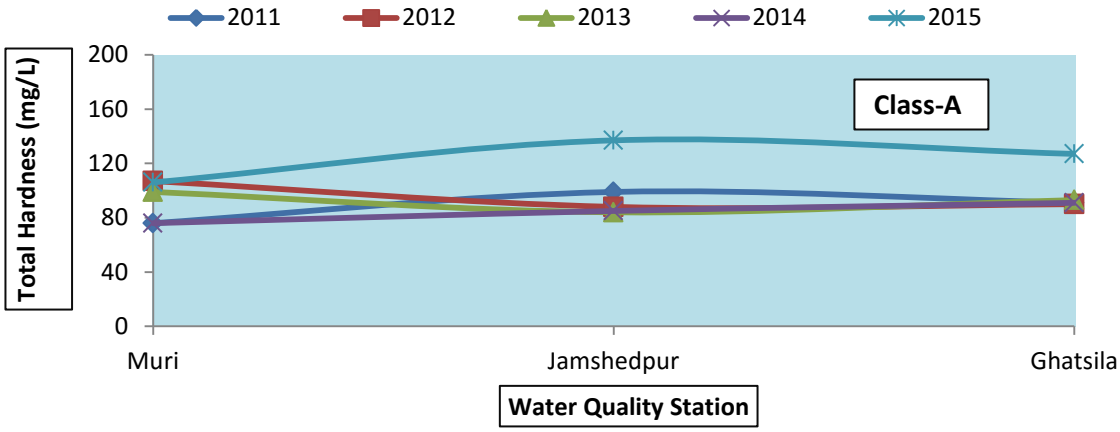


Fig 2.2.11 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for Total Hardness at Subernarekha Basin

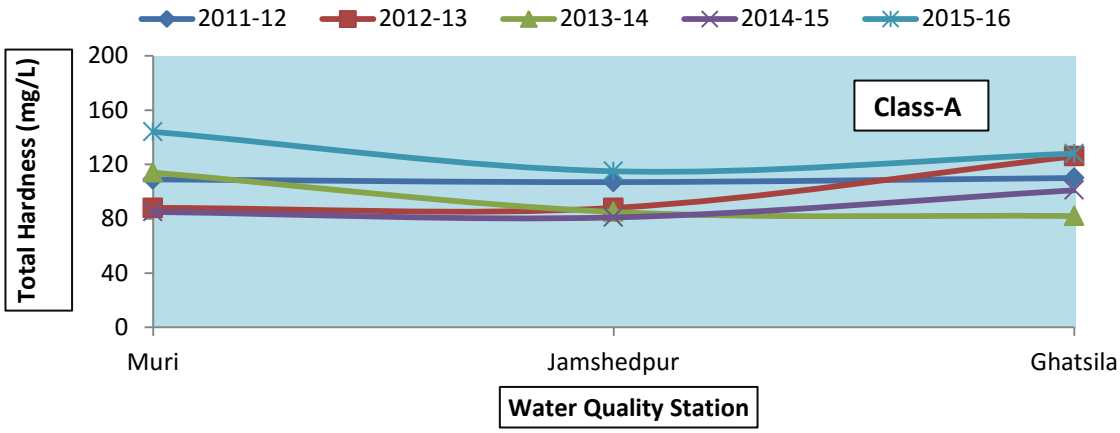


Fig 2.2.12 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for Total Hardness at Subernarekha Basin

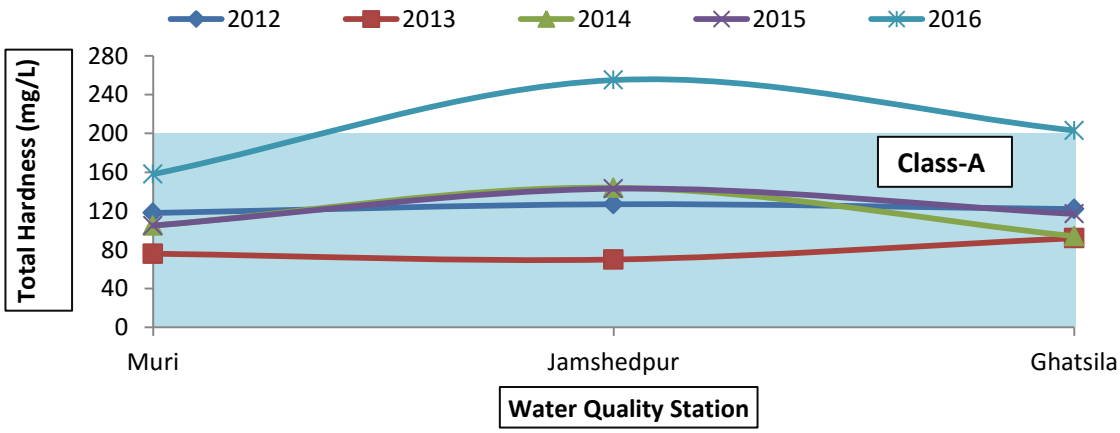
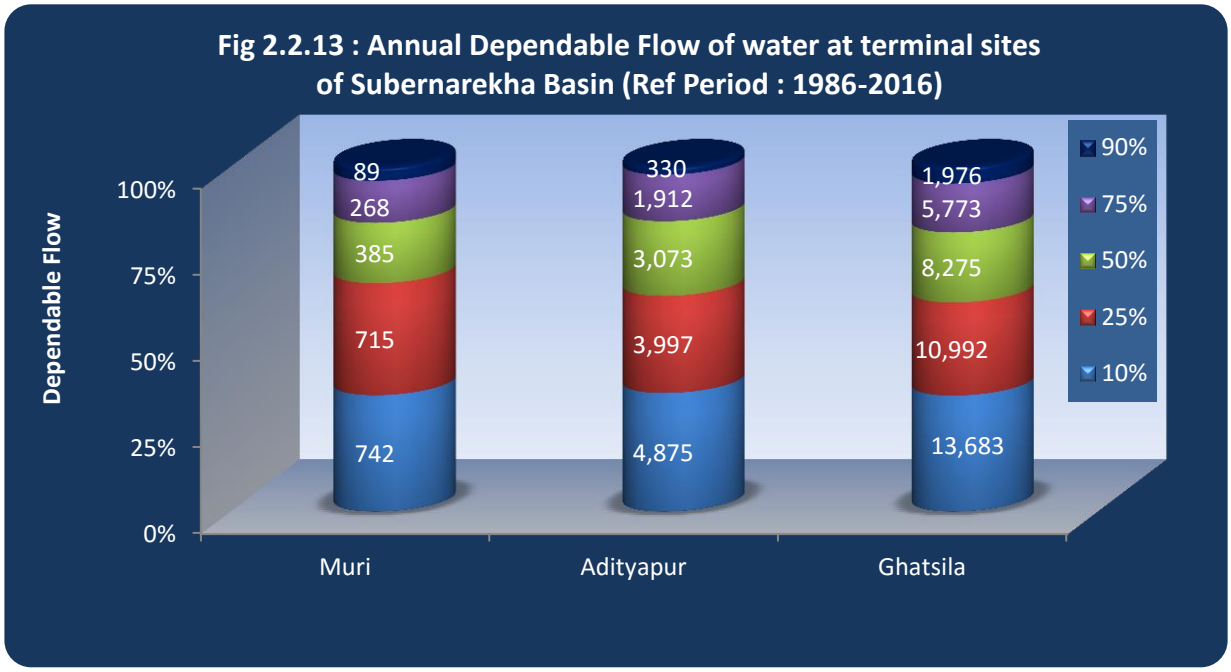


Table 2.2.1: Annual Dependable Flow Of Water at Terminal Sites Of Subernarekha Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Muri	11/1989 to 5/2016	741.60	714.59	385.47	268.00	89.49
2	Adityapur	6/1986 to 5/2016	4874.89	3996.86	3072.94	1911.97	330.37
3	Ghatsila		13683.45	10991.64	8275.45	5773.49	1975.56

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar



2.2.5 Land Use Statistics: Table 2.2.2 to Table 2.2.4 present below the land use pattern, gross irrigated area and net irrigated area for Subernarekha basin as compared to all basins(Region-III).

TABLE 2.2.2: LAND UTILISATION PATTERN OF SUBERNAREKHA AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Subernarekha	24,998.34	4,367.49	4,997.67	2,275.01	5,135.70	8,222.47	2,503.71	10,726.18
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.2.3: GROSS AREA IRRIGATED BY SOURCES OFSUBERNAREKHA AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Subernarekha	341.38	171.53	512.91	73.04	650.59	96.56	747.15	70.53	1,403.63
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.2.4: NET AREA IRRIGATED BY SOURCES BY SUBERNAREKHA AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Subernarekha	23.21	-	23.21	64.36	34.83	85.88	120.70	1,042.15	1,250.42
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.2.6 Urban Centres: The important cities/ towns in the basin are Jamshedpur and Muri.

2.2.7 Industries: Important industries in the basin are tobacco products, cement, asbestos sheets, glass, ceramics, Locomotives & Coaches, automobiles, agricultural equipment, wires & cables, iron &steel machinery, metal tubes & conduits, copper & brass, chemicals acids & caustics, fertilizers and Soaps.

2.2.8 Minerals: The important minerals found in the basin are Coal, Iron Ores, Bauxite, Copper, Chromium, Gold, Vanadium Lime stone, Dolomite, Asbestos, China Clay, Talc and building Stone.

2.3 BRAHMANI AND BAITARANI BASIN

Location: The basin consisting of Brahmani and Baitarani is situated within the geographical co-ordinates of north latitude $20^0$28' to $23^0$38' and east longitude $83^0$55' to $87^0$3'. This basin is bound on the north by the Chhotanagpur plateau, on the south-west by Mahanadi basin and on the east by the Bay of Bengal. The basin flows through Jharkhand, Chattisgarh, and Odisha States and its catchment area is 51,822 sq km which is nearly 1.7% of the total geographical area of the country.

2.3.1 Brahmani Basin

The Brahmani is known as the South Koel in the upper reaches. It originates near Nagri village in Ranchi District at an elevation of about 600metre. The total length of its run is about 799 km. The Brahamani sub basin covers 39,033 sq. km and has a long sausage shape. The principal tributaries of this river are Sankh, Tikra and Karo. The climate of the basin is tropical with a fairly hot summer and moderately cold winter. The basin is influenced by south west monsoon from June to October.

2.3.1.1 Irrigation Projects: Rengali (major) and Ramiala irrigation project (medium)are the prominent projects in the catchment area of the basin.

2.3.1.2 Hydrological Observation (H.O.)Sites: There are in total 8 H.O. sites out of which one site viz. Rengali,isexclusively for guage data only. Gauge, Discharge, Sedimentation and Water Quality (GDSQ) observations are being collected at six sites and one site viz.Talcher is being maintained for recording observation on Gauge and Water Quality(as per 2015-16 data).

2.3.2 Baitarni Basin

The Baitarani is one of the important east flowing rivers of peninsular India, flowing eastward and joining the Bay of Bengal. The river originates in the hill ranges of Keonjhar District of Odisha near Dumuria village at an elevation of about 900 metre. The river flows through Jharkhand and Odisha states. The main tributaries of Baitarani are the Salandi and the Matai. The total catchment area of this basin is 12,789 sq km and is roughly circular in shape. More than 93% of the catchment area falls in Odisha. The basin is surrounded by the Brahmani on the south and west, the Subernarekha on the north, the Burhabalang and the Bay of Bengal on the east. The river is flashy in nature; having a total length of 355 km with the upper reach up to Anandpur is in the hilly region. There is a considerable fall in elevation from RL 367m at Champua to RL 28m at Anandpur. The basin receives most of the rainfall from the south-west monsoons during the period from June to October and average rainfall is 1450 mm.

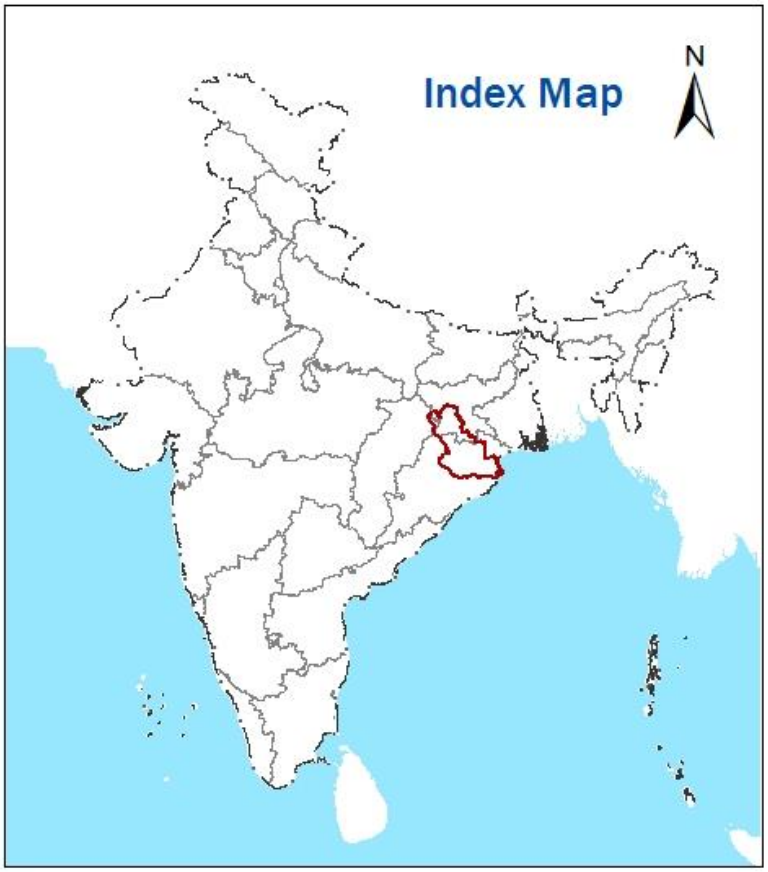
2.3.2.1 Irrigation Projects: Akhuapada, Salandi, Anandpur Barrage and Kanpur Irrigation System are the Major Irrigation Projects in the catchment area of the Baitarni river basin.

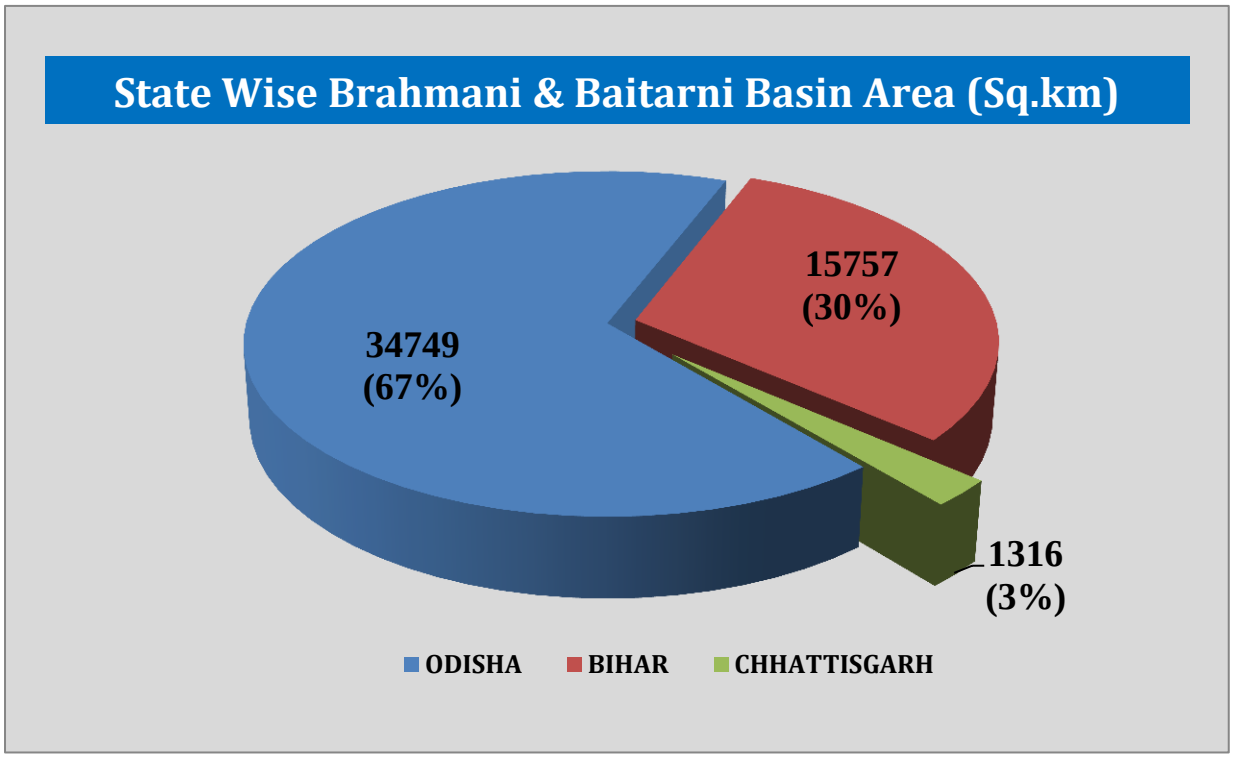
2.3.2.2 Hydrological Observation Sites: Central Water Commission is maintaining 6 sites(including seasonal rainfall site at Thakurmunda which remains operative only during monsoon), out of which 2 are of GDSQ (Gauge, Discharge, Sediment, Quality) type, 3 are of G (Gauge) type and 1 is RF (Rainfall) type (as per 2015-16data).

2.3.3 Peak Water Level: In the Brahmani & Baitarni basin, 8 observation sites have been reported and Anandpur is the oldest site established on 07.03.1972. Gauge/Discharge observations are being recorded since then. Maximum Peak water level recorded at 378.95 metreinChampuasite on 23.09.2011 during the reference period 2015-16.

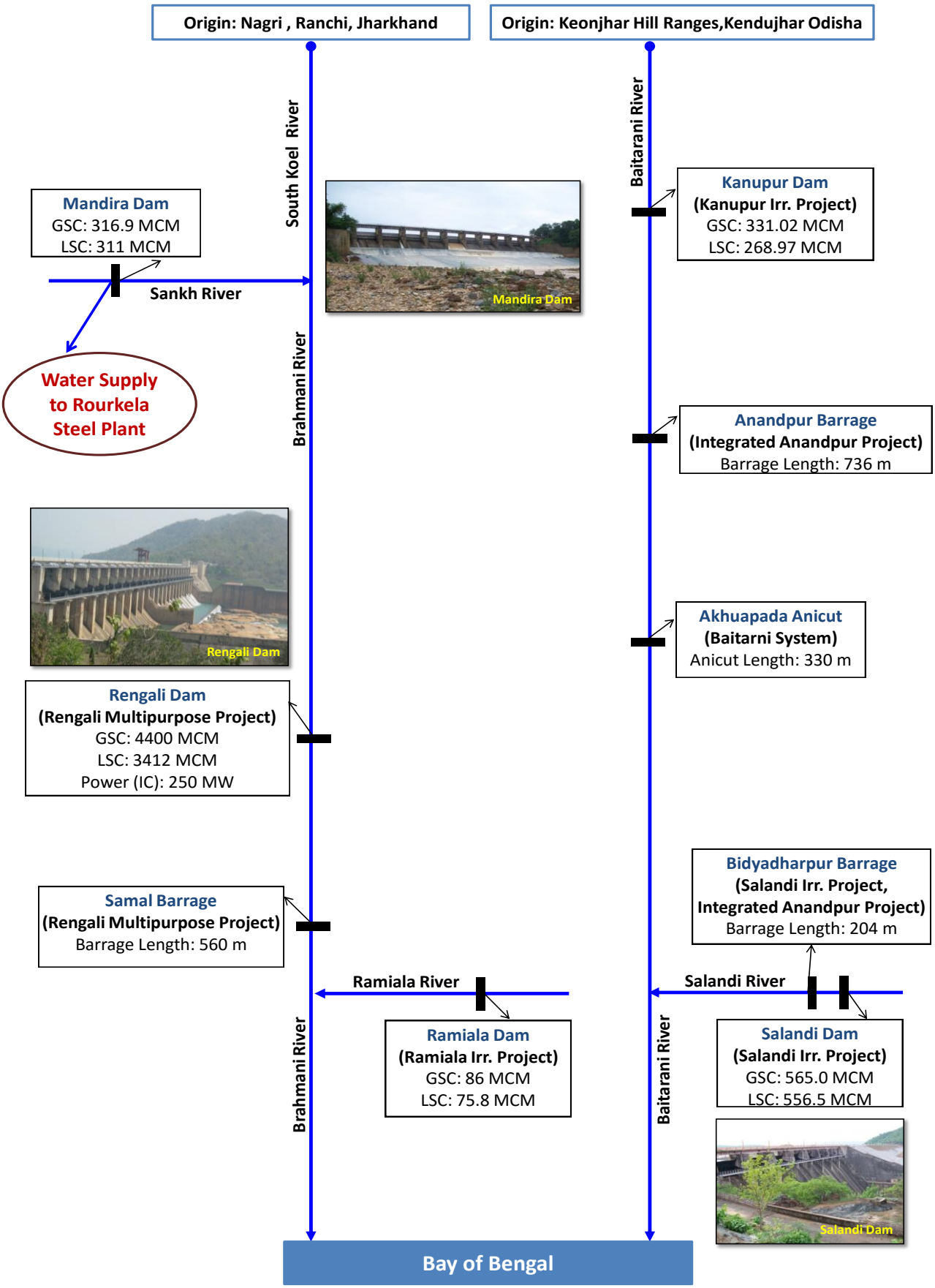
2.3.4 Water Quality: Temporal trends of water quality parameters viz. pH,BOD,DO, Total hardness are given below for four sites of Brahmani & Baitarni basin (Fig 2.3.1 to Fig 2.3.12).


BRAHMANI & BAITARNI BASIN
84°0'0"E
85°0'0"E
86°0'0"E
87°0'0"E
24°0'0"N
23°0'0"N
22°0'0"N
21°0'0"N
20°0'0"N
RANCHI
JHARKHAND
CHHATTISGARH
ODISHA
BURLA
BHUBANESWAR
BAY OF BENGAL
South Koel
Bankh
Tilga
Deo
Jurgi
Karo
Jaraikela
Mandira Dam
Panposh
Brahmani
Barjoo
Chandri
Somini
Champua
Kanupur Dam
Aradi
Baitarani
Khaini
Jamuna
Sapiat
Gomlai
Rukura
Bar Jhor
Korapani
Monalda
Neorijol
Keonjhar
Kanjhari
Swampatana
Naraikola
Gohira
Rengali Dam
Sapua (Medium)
Salandi
Bidyadharpur Barrage
Ananadpur
Salandi
Ramiala
Ramiala Dam
Samal Barrage
Talcher
Altuma
Jenapur
Jenapur Expressway
Akhuapada Anicut
Reb
Kharsua
Indupur
Legend
State Capital
Forecast Station
G
GD
GQ
GDSQ
Dam/Weir/Barrage
Divisional Office
CE/CO/DO
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.


Index Map
N


State Wise Brahmani & Baitarni Basin Area (Sq.km)
34749
(67%)
15757
(30%)
1316
(3%)
ODISHA
BIHAR
CHHATTISGARH

Brahmani & Baitarni Rivers Flow Line Diagram



Basin: Brahmani & Baitarni (Parameter : pH)

Fig 2.3.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Brahmani Basin

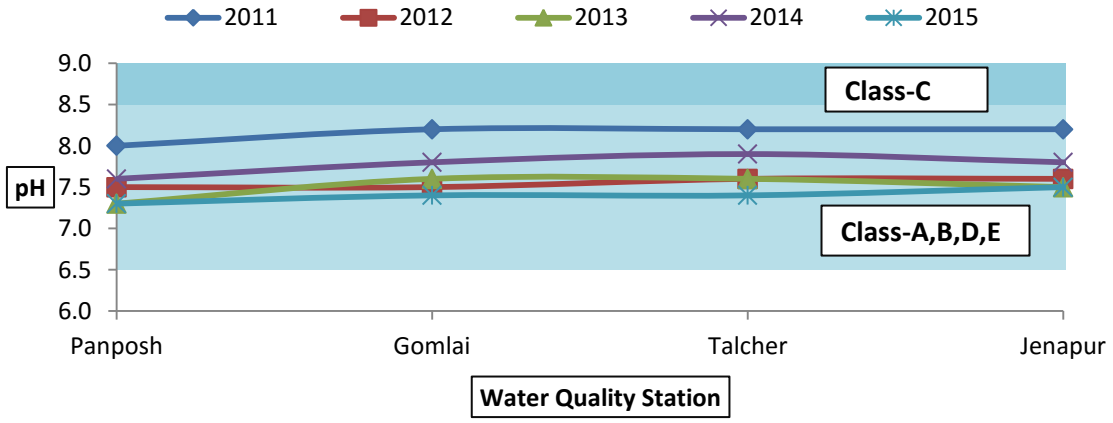


Fig 2.3.2 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for pH at Brahmani Basin

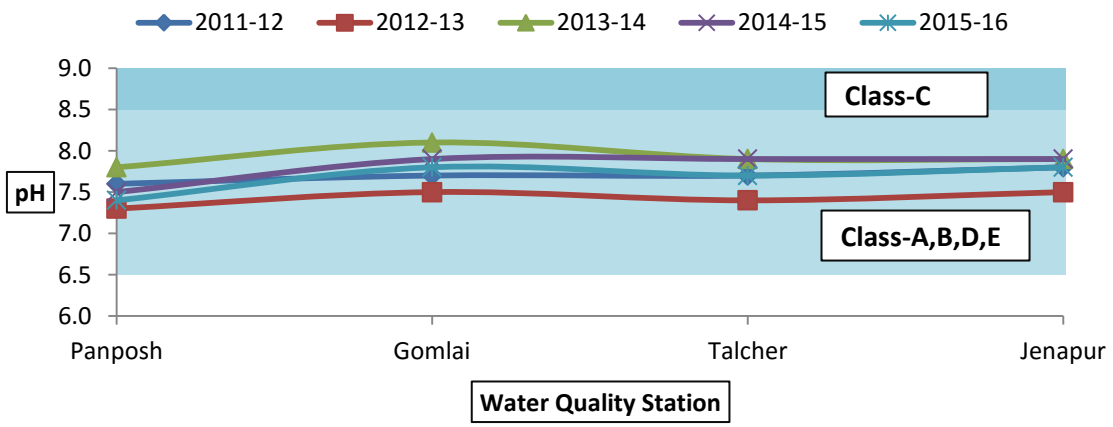
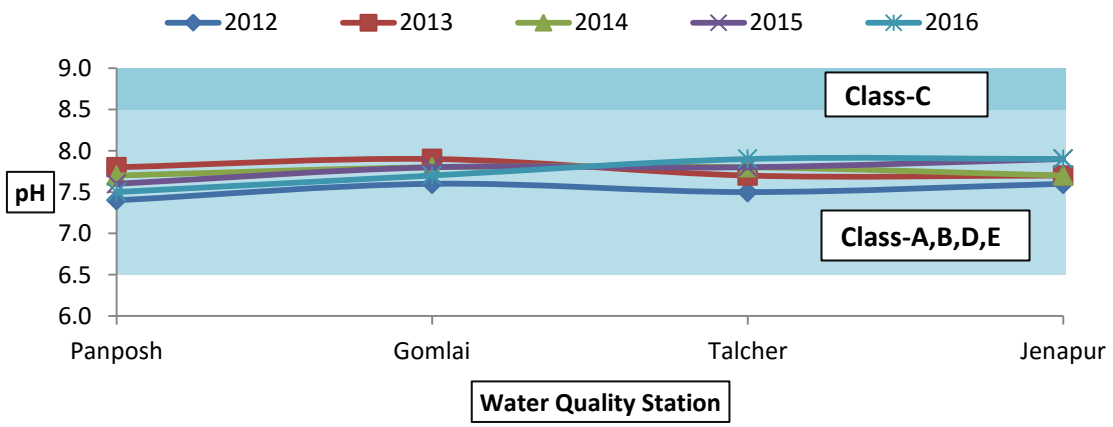


Fig 2.3.3 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for pH at Brahmani Basin



Basin: Brahmani & Baitarni (Water Quality Parameter : Biological Oxygen Demand)

Fig 2.3.4 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Brahmani Basin

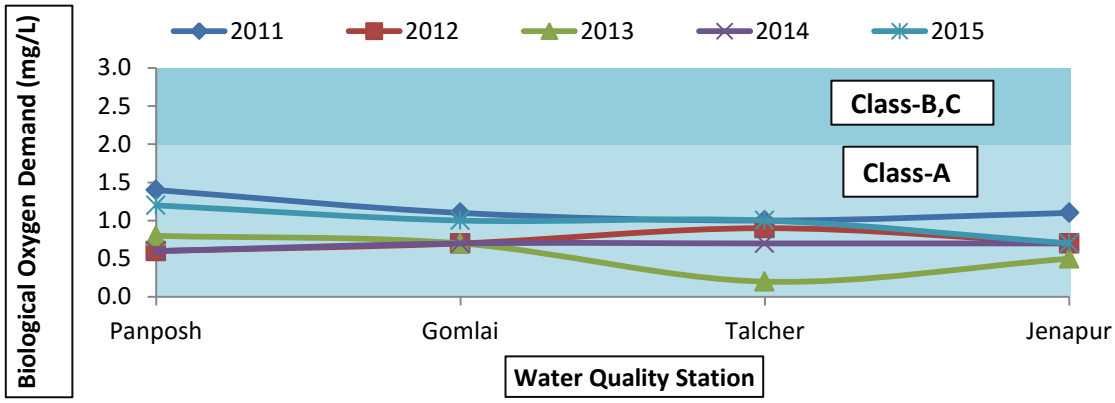


Fig 2.3.5 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for BOD at Brahmani Basin

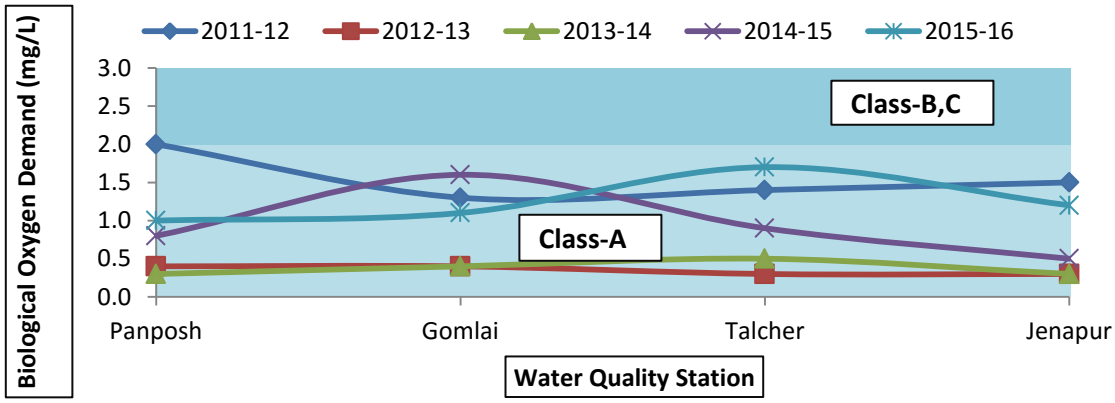
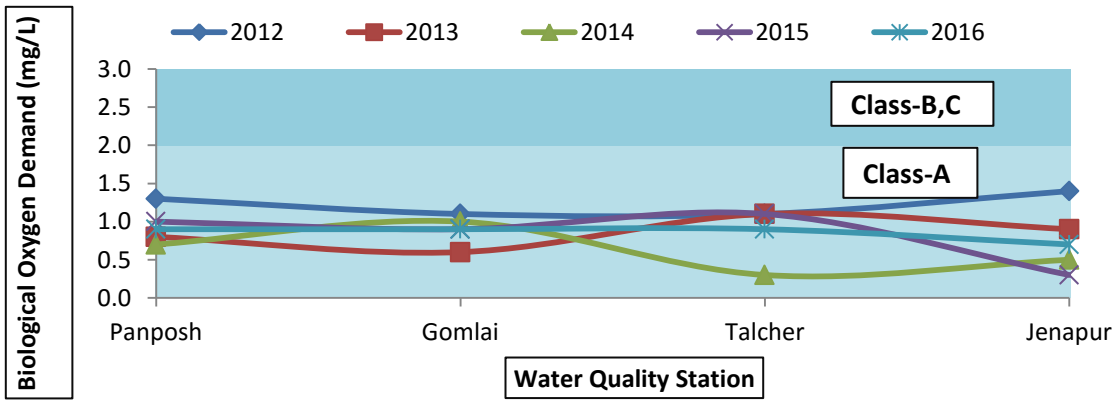


Fig 2.3.6 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for BOD at Brahmani Basin



Basin: Brahmani & Baitarni (Water Quality Parameter : Dissolved Oxygen)

Fig 2.3.7 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for DO at Brahmani Basin

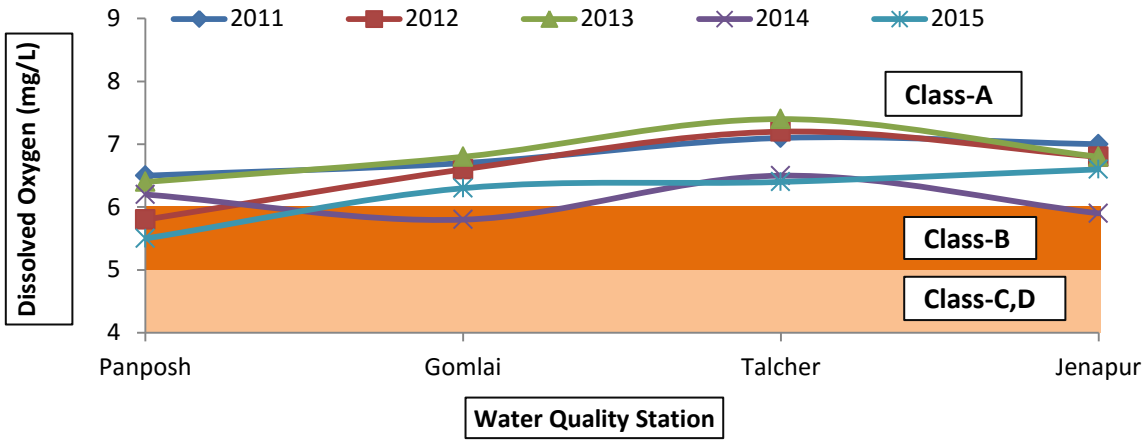


Fig 2.3.8 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for DO at Brahmani Basin

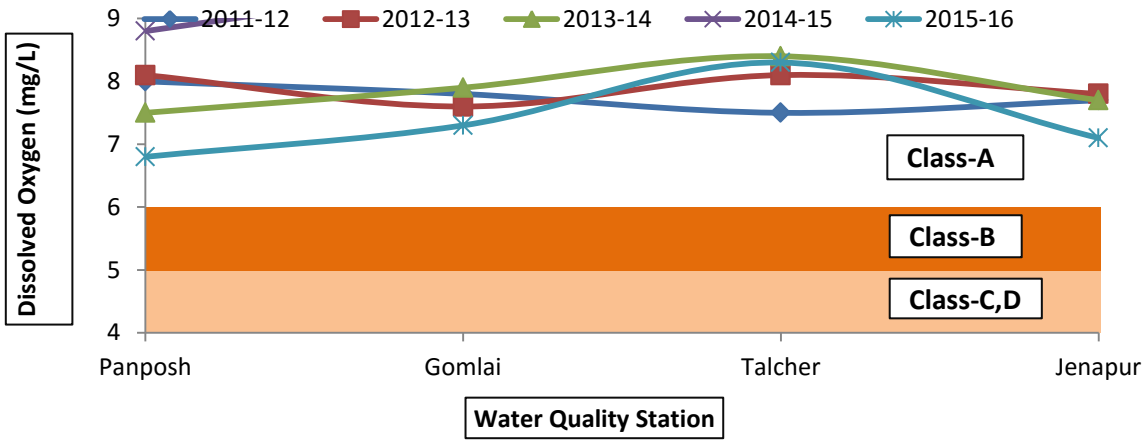
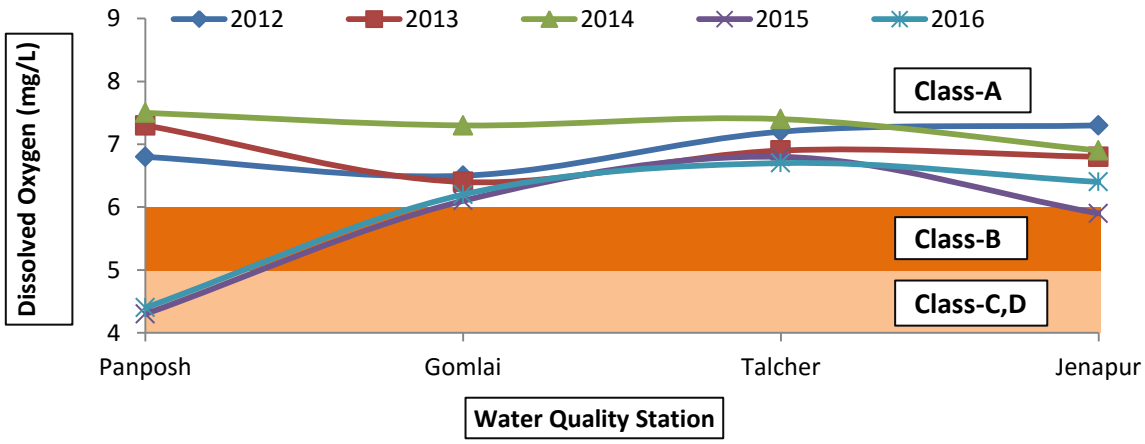


Fig 2.3.9 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for DO at Brahmani Basin



Basin: Brahmani & Baitarni (Water Quality Parameter : Total Hardness)

Fig 2.3.10 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at Brahmani Basin

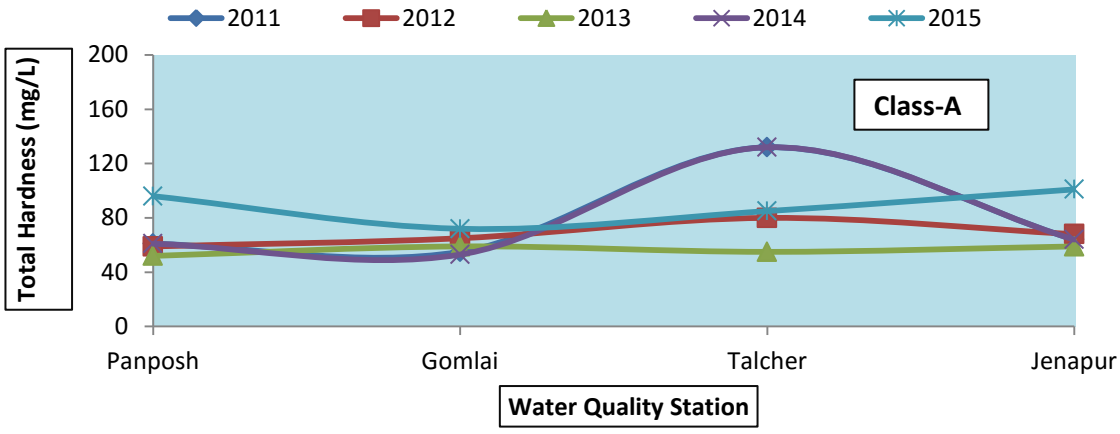


Fig 2.3.11 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for Total Hardness at Brahmani Basin

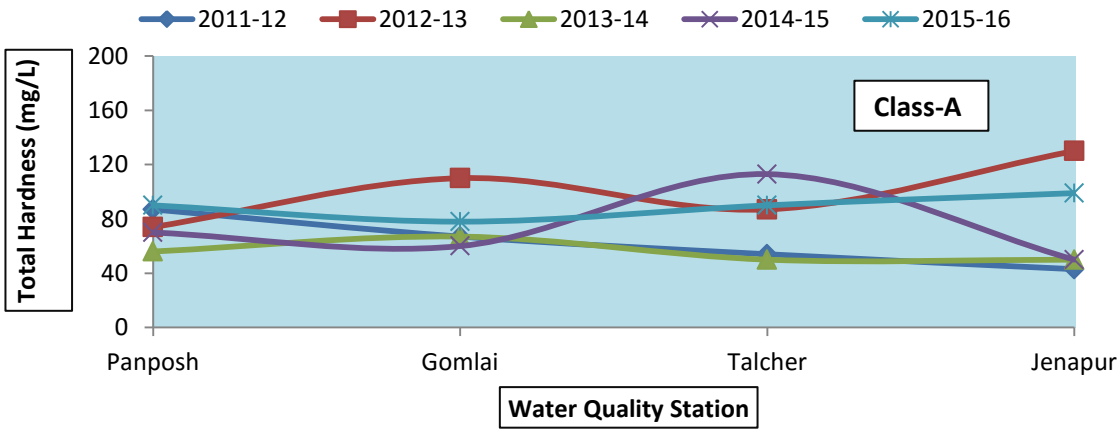


Fig 2.3.12 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for Total Hardness at Brahmani Basin

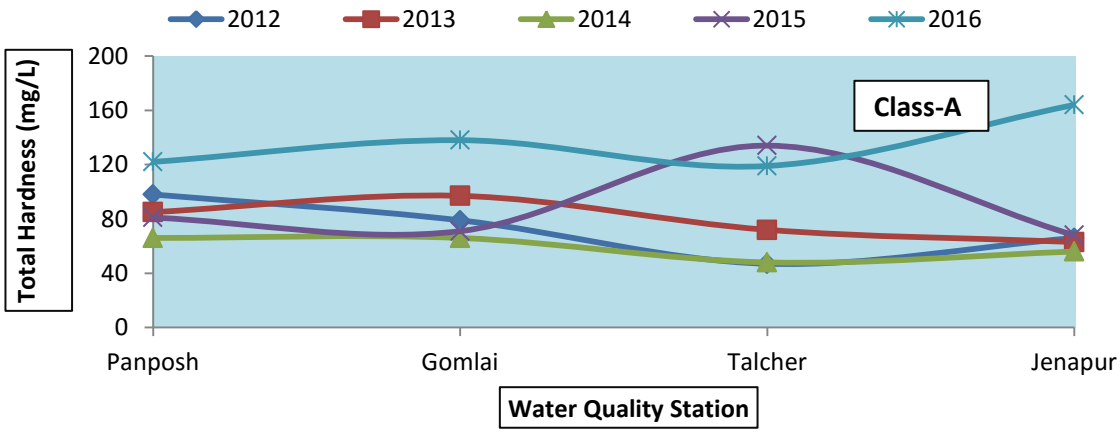
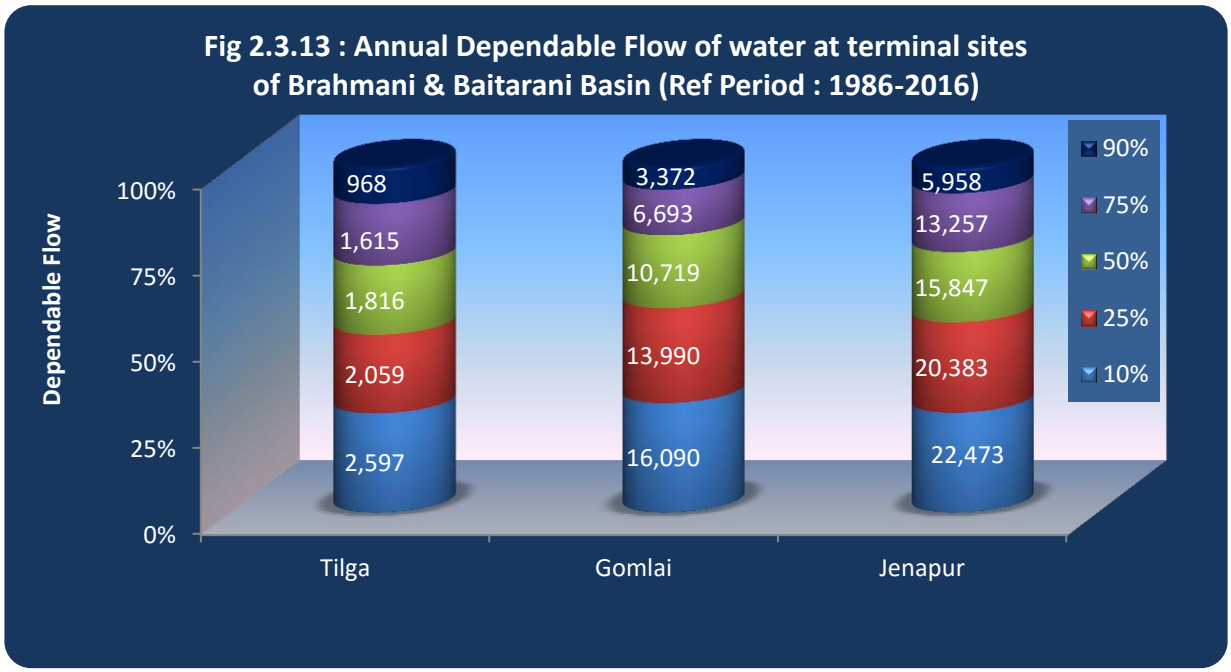


Table 2.3.1: Annual Dependable Flow Of Water at Terminal Sites Of Brahmani & Baitarani River Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	TILGA	06/1986 to 05/2016	2596.75	2058.72	1816.04	1614.98	967.61
2	GOMLAI		16089.94	13990.08	10718.79	6692.60	3372.33
3	JENAPUR		22472.90	20383.03	15847.41	13257.17	5958.43

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar



2.3.5 Land Use Statistics: Table 2.3.2 to Table 2.3.4 below present the land use pattern, gross irrigated area and net irrigated area for Brahmani & Baitarnibasin as compared to all basins(Region-III).

TABLE 2.3.2: LAND UTILISATION PATTERN OF BRAHAMANI & BAITARANI AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Brahamani & Baitarani	44,272.07	9,349.54	7,393.31	4,411.50	8,703.65	14,414.07	1,415.56	15,829.63
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.3.3: GROSS AREA IRRIGATED BY SOURCES OFBRAHAMANI & BAITARANI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Brahamani & Baitarani	1,518.22	308.55	1,826.78	164.93	657.80	120.93	778.74	117.40	2,887.84
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.3.4: NET AREA IRRIGATED BY SOURCES OF BRAHAMANI & BAITARANI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Brahamani & Baitarani	28.26	0.04	28.30	66.00	31.50	101.64	133.14	2,494.63	2,722.07
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.3.6 Urban Centres: The important towns in the basin are Champua, Karanjia, Keonjhar, and Anandpur.

2.3.7 Minerals: The important minerals found in the basin are Iron Ore, Copper, Chromite, Asbestos, Manganese, Atomic Minerals, China Clay and Soap Stone.

2.3.8 Industries: Major industries in the basin are Steel Plants and Aluminium plants. There exist a number of other industries like fertilizers, cement, explosives chemicals, machine tools, Ferro-Manganese and sponge Iron Plant.

2.3.9 Minerals: The basin is rich in mineral resources. Coal, Iron ore, Copper, Chromites, Limestone, Dolomites, Bauxite, Manganese, China clay, Fire clay, Asbestos, Atomic Minerals and Soap Stone are the main mineral resources of this basin.

2.4 GODAVARI BASIN

Location: The Godavari River, the largest of the peninsular rivers and third largest in India, covers about 10% of India's total geographical area. The catchment area of the river is 3,12,812 sq km and is spread in the States of Maharashtra (48.6%), erstwhile Andhra Pradesh (23.4%), Madhya Pradesh (10.0%), Chhattisgarh (10.9%), Odisha (5.7%) and Karnataka (1.4%). The basin lies in the Deccan Plateau and is situated between latitude 16^0 19' north and 22^0 34' north and longitude 73^0 24' east and $83^0$4' east. The Godavari river rises in the Nasik district of Maharashtra, about 80 km from the Arabian sea at an elevation of 1,067 metre after flowing for about 1,465 km in a generally south-east direction, through Maharashtra and erstwhile Andhra Pradesh it falls into the Bay of Bengal. The Godavari basin is bounded by the Satmala Hills, the Ajanta range and the Mahadeo hills on the north, by the Eastern Ghats on the south and the east and by the Western Ghats on the west. The basin is roughly triangular in shape and the main river itself runs practically along the base of the triangle.

The western edge of the basin is an almost unbroken line formed by the Sahyadri range of the Western Ghats, from 600 to 2100 metre height. It has the heaviest rainfall and the dampest climate in the basin.

About 64 km from its source, the Godavari receives the waters from Dharna, on its right bank and the Kadana joins it from the left. The combined waters of the Pravara and Mula which rise in the hills of Akola join the river about 217 km from its source, About 338 km lower down, while still in Maharashtra, the river receives the combined waters from the Purna and Dudhna rivers and after a further 138 km at the border of Maharashtra and erstwhile Andhra Pradesh, the waters of the Majira river joins it from the south. At this point, Godavari flows at an elevation of about 329 metre.

The Pranhita river, conveying the combined waters of the Penganga, the Wardha and Wainganga, which drain Nagpur and southern slopes of the Satpura ranges, falls into Godavari about 306 km below its confluence with the Majira. Forty eight km lower, the waters of the Indravathi join the river. Both the Pranhita and the Indravathi are major rivers in their own right. The last major tributary is the Sabari from Odisha, which falls into the Godavari, 100 km above Rajahmundry.

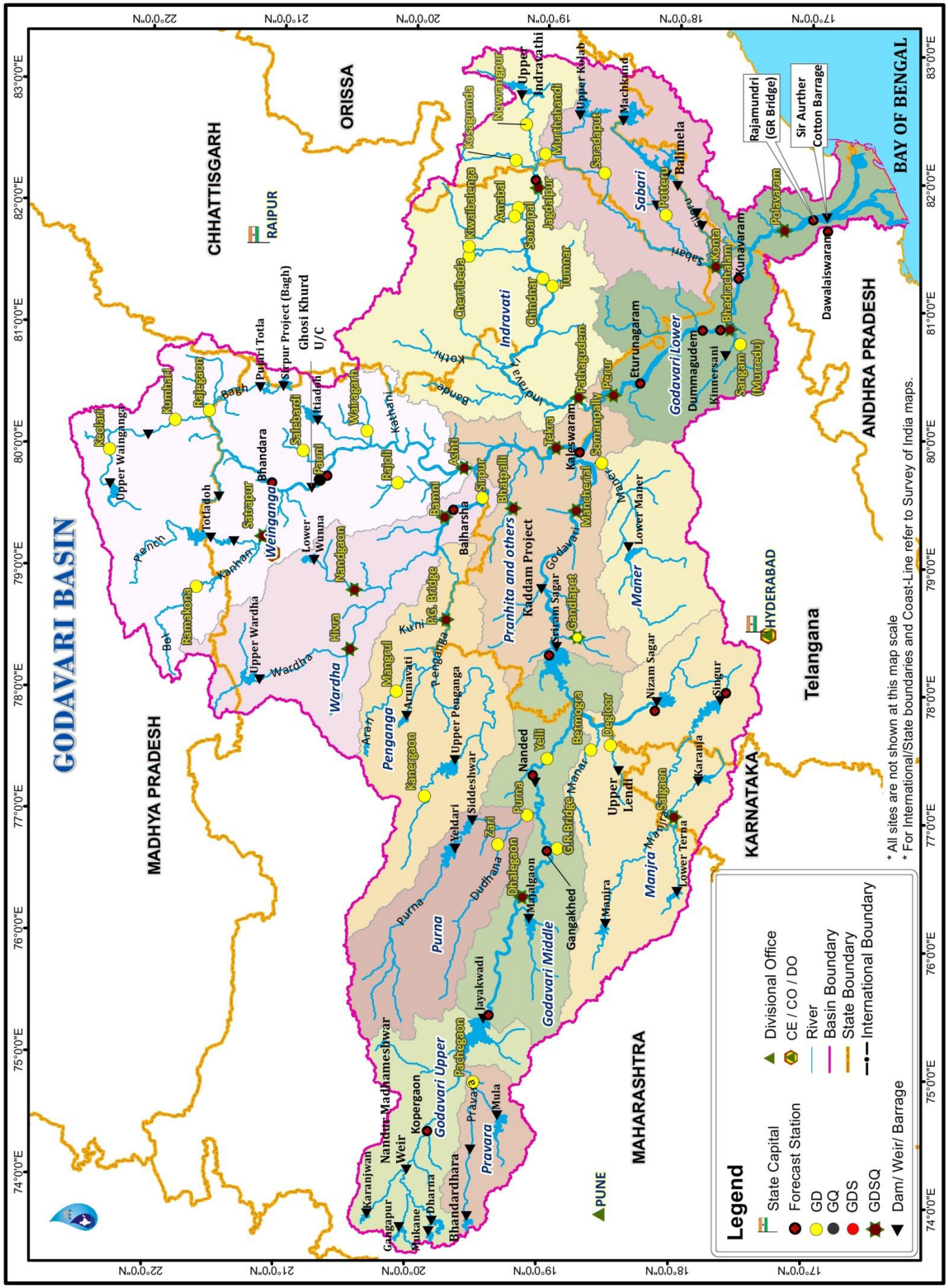
The largest tributary of the Godavari is the Pranhita with about 20% coverage of drainage area. The Pravara, Manjira and Maner are notable right bank tributaries, and the Purna, Pranhita, Indravathi and Sabari are important left bank tributaries. The Godavari in the upper, middle and lower reaches make up for24.1% coverage of drainage area. The Godavari basin as whole receives 1043 mm of the annual rainfall on an average, during the southwest monsoon, which sets in mid June and ends by mid October.

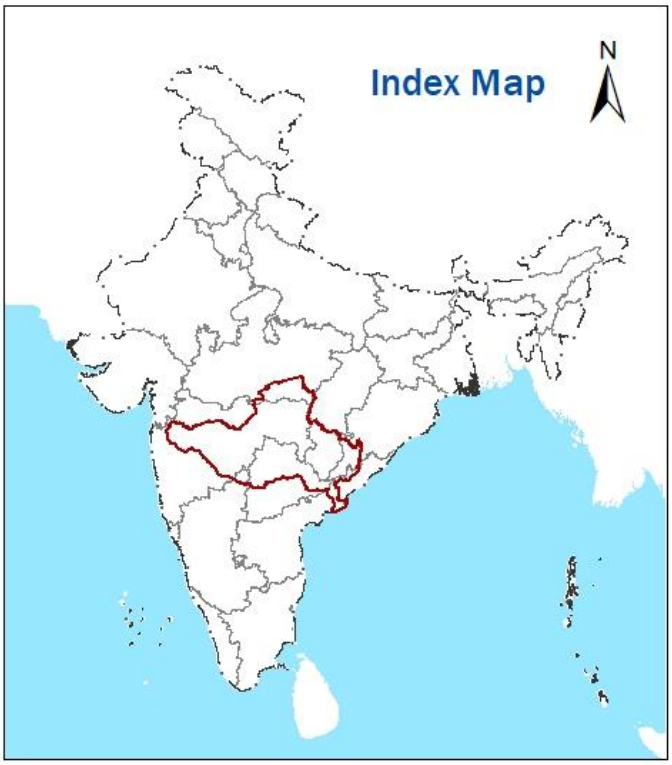
2.4.1 Irrigation Projects: Kadam, Wainganga Canal and Surthi System major Irrigation Projects are in the catchment area of Godavari Basin. The Kodwa, Godavari (Dama), Pravara, Purna, Pus, Gangapur, Bagh, and Mula Major Projects of Maharashtra are in the catchment area of Godavari Basin. There are several prominent Major Irrigation Projects like Waghed, Ozarkhed, Karanjawan, Pallakhed and Madmeswar, Jayakwadi Stage-1, Bhandaradara, Manar, Adhole, SRS Project, Nizamsagar, Lower Maner, Maner Project, Manjira, Dhuti weir, Idiadoh, Cotton Barrage, Lakhnavaram, Upper Kolab and Lower Sileru situated also in the catchment areas of the river basin.

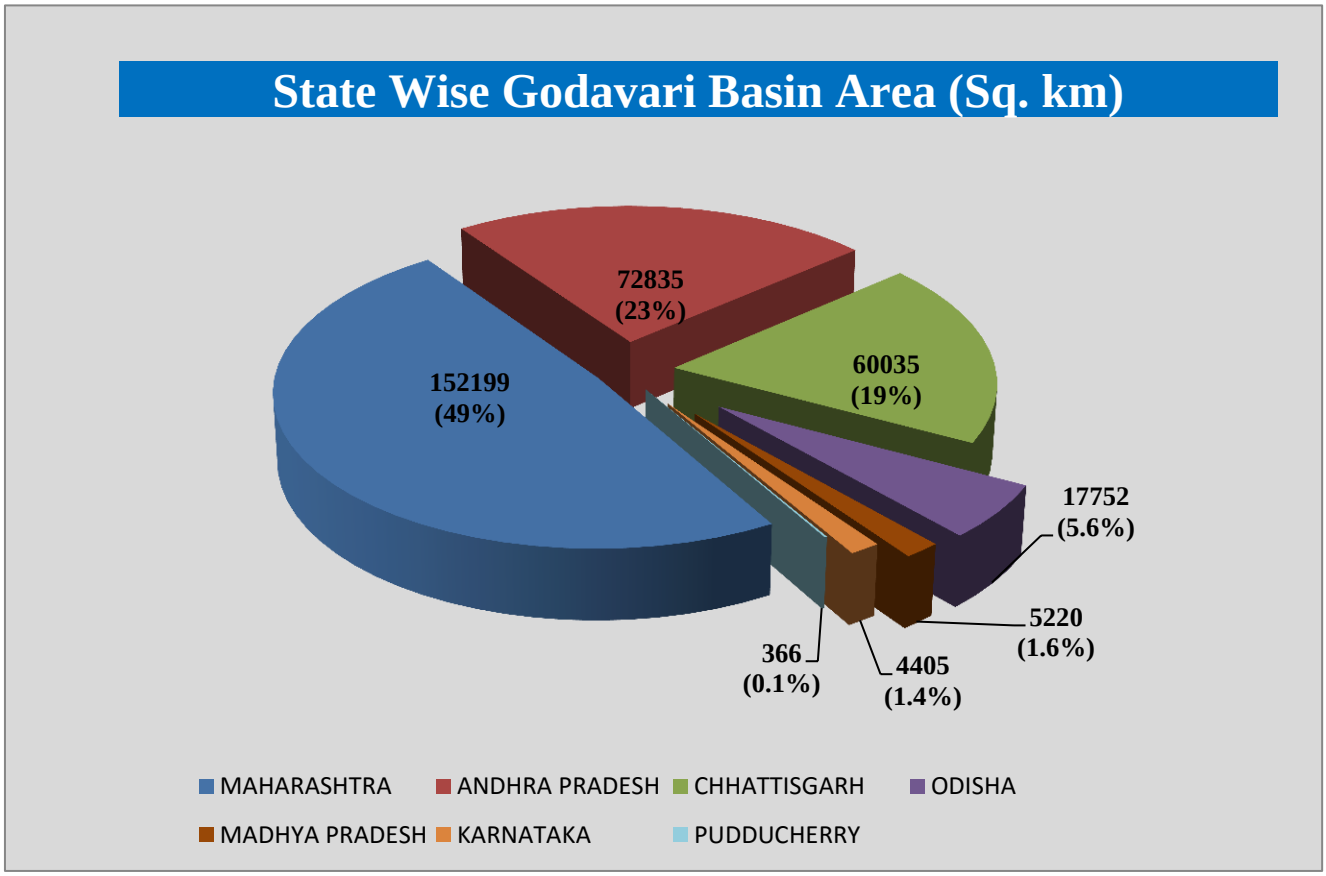
2.4.2 Hydrological Observation Sites: There are in total 49 H.O. sites out of which Gauge(G) and Discharge (D) observations are being measured at all sites, Water Quality(Q) in 31 sitesand Sediment in 25 sites(as per 2015-16 data).

2.4.3 Peak Water Level: This is a large basin in area in respect of drainage area. It has 48 historical sites which are maintaining the information on observations in respect of at least two or more types of data: Gauge/Discharge, Sedimentation and Water Quality. Tekra is the oldest site in the basin and established on 15.07.1964 for collecting data on Gauge/ Discharge, Subsequently, the scope has been extended to observe data on sedimentation and water quality. Among all thereported sites, the maximum water level was observed at Cherribeda (573.90 metre) site on 04.07.2006 during the reference period 2015-16. The Polavaram site reported the minimum peak water level at 28.02 metre on 16.08.1986 for the same the reference period.

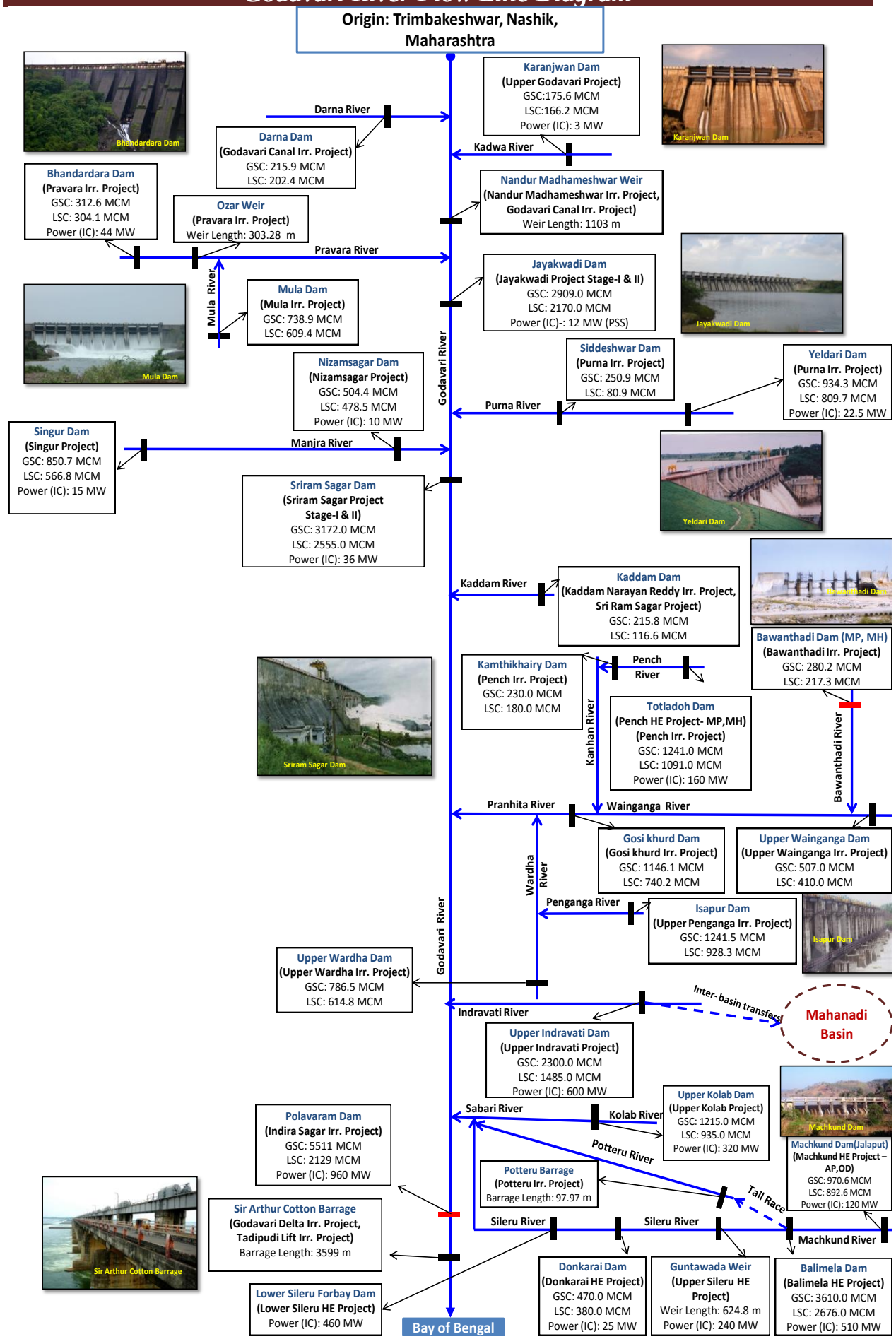
2.4.4 Water Quality: Temporal trends of water quality parameters viz. pH,BOD,DO, Total hardness are given below for three sites of Godavari basin (Fig 2.4.1 to Fig 2.4.12).


GODAVARI BASIN
CHHATTISGARH
ORISSA
MADHYA PRADESH
MAHARASHTRA
KARNATAKA
Telangana
ANDHRA PRADESH
BAY OF BENGAL
RAIPUR
HYDERABAD
PUNE
Rajamundri (GR Bridge)
Sir Aurther Cotton Barrage
Dawalaiswaram
Polavaram
Kunavaram
Bhadrachalam
Eturunagaram
Dummagudem
Kinnersani
Sangam (Muriedu)
Perur
Pathagudem
Tekra
Kaleswaram
Somanpally
Mancherial
Lower Maner
Maner
Godavari Lower
Godavari Middle
Godavari Upper
Indravati
Sabari
Pranhita and others
Kaddam Project
Sriram Sagar
Gandlapet
Nizam Sagar
Singur
Manjra
Lower Terna
Karanja
Upper Lendi
Deglur
Betmogra
Manar
G.R.Bridge
Ghalegaon
Manalgaon
Nanded
Yelli
Puna
Zari
Siddeshwar
Upper Penganga
Kanergaon
Penganga
Arunavati
Mangrul
Arran
Veldari
Durdhana
Purna
Jayakwadi
Pachegaon
Kopergaon
Nandur Madhameshwar
Weir
Dharna
Mukane
Gangapur
Karanjwan
Bhandardhara
Pravara
Mula
Wardha
Upper Wardha
Hivra
Nandgaon
Lower Wunna
Wunna
Kanhan
Pench
Totladoh
Satrapur
Bhandara
Weinganga
Ramakona
Bel
Balharsha
Bamni
Ashti
Sirpur
Bhatpalli
Rajoli
Kathani
Wairagarh
Ghosi Khurd U/C
Sirpur Project (Bagh)
Pujari Totla
Salebardi
Pauni
Itiadoh
Rajegaon
Bagh
Kumhari
Keolari
Upper Wainganga
Indravati
Kotri
Bande
Chimdnar
Tumnar
Sonarpal
Jagdelpur
Amabel
Kivalbelenga
Cherribeda
Nowangpur
Kosagumda
Upper Indravathi
Murthahandi
Upper Kolab
Machkund
Saradaput
Balimela
Potteru
Sabari
Konta
Sabari
Lower Sileru
Balimela
Upper Sileru
Machkund
Upper Kolab
Murthahandi
Upper Indravathi
Nowangpur
Kosagumda
Cherribeda
Kivalbelenga
Amabel
Sonarpal
Jagdelpur
Tumnar
Chimdnar
Indravati
Bande
Kotri
Indravati
Pathagudem
Perur
Eturunagaram
Godavari Lower
Dummagudem
Kinnersani
Sangam (Muriedu)
Bhadrachalam
Kunavaram
Polavaram
Dawalaiswaram
Rajamundri (GR Bridge)
Sir Aurther Cotton Barrage
BAY OF BENGAL
ANDHRA PRADESH
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KARNATAKA
MAHARASHTRA
MADHYA PRADESH
CHHATTISGARH
ORISSA
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
Legend
State Capital
Forecast Station
GD
GQ
GDS
GDSQ
Dam/ Weir/ Barrage
Divisional Office
CE / CO / DO
River
Basin Boundary
State Boundary
International Boundary


Index Map
N


State Wise Godavari Basin Area (Sq. km)
72835
(23%)
60035
(19%)
152199
(49%)
17752
(5.6%)
5220
(1.6%)
366
(0.1%)
4405
(1.4%)
MAHARASHTRA
ANDHRA PRADESH
CHHATTISGARH
ODISHA
MADHYA PRADESH
KARNATAKA
PUDDUCHERRY

Godavari River Flow Line Diagram



Basin: Godavari (Water Quality Parameter : pH)

Fig 2.4.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Godavari Basin

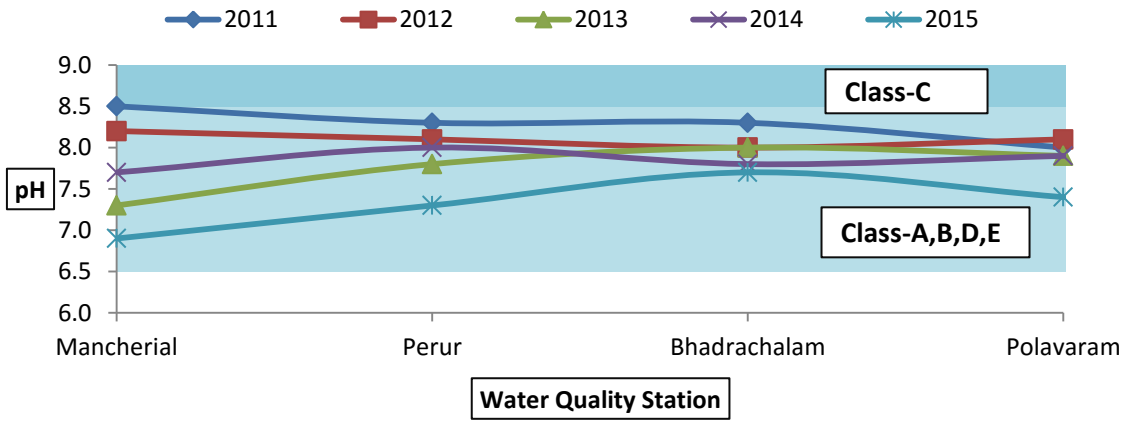


Fig 2.4.2 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for pH at Godavari Basin

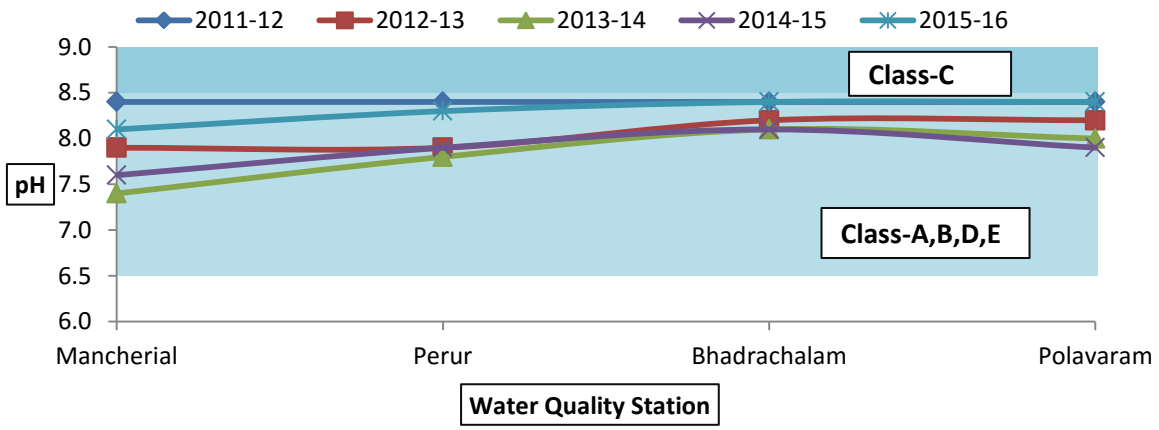
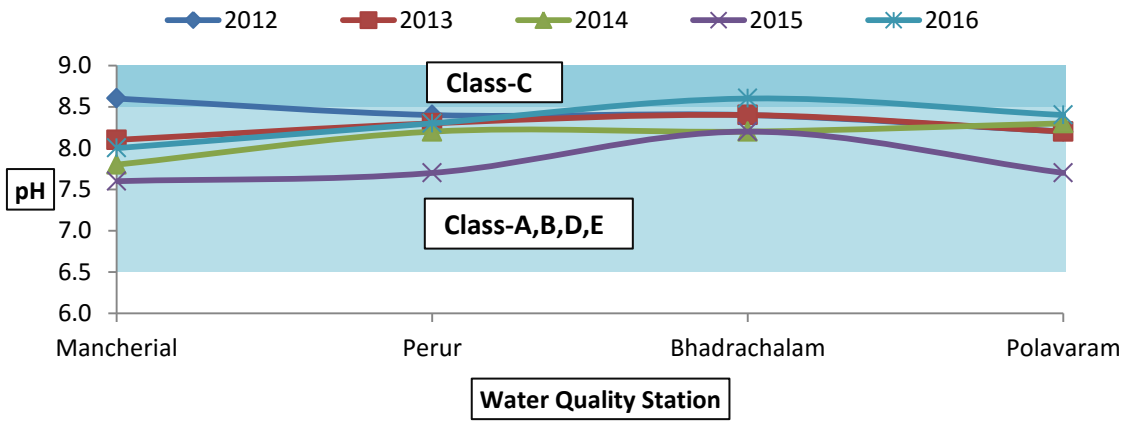


Fig 2.4.3 : Seasonal 5 years trend (2012 to 2016) during Summer (Mar-May) for pH at Godavari Basin



Basin: Godavari (Water Quality Parameter :Biological Oxygen Demand)

Fig 2.4.4 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Godavari Basin

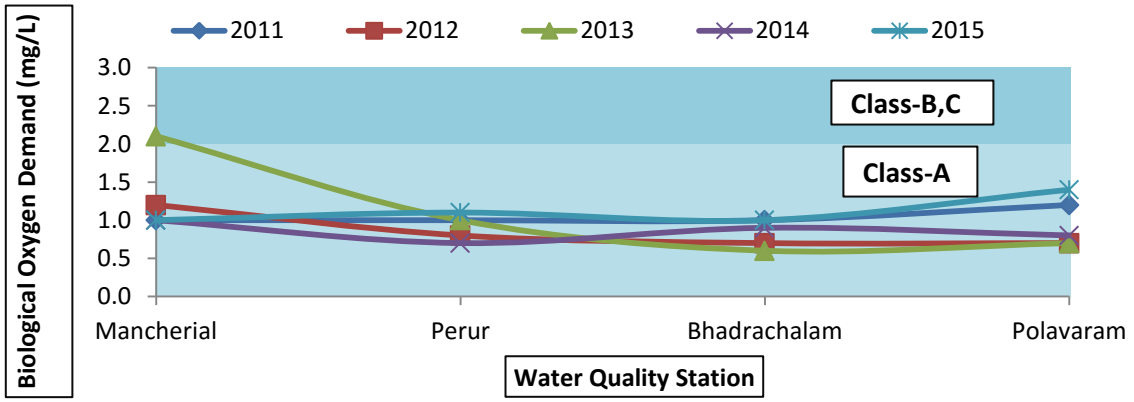


Fig 2.4.5 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for BOD at Godavari Basin

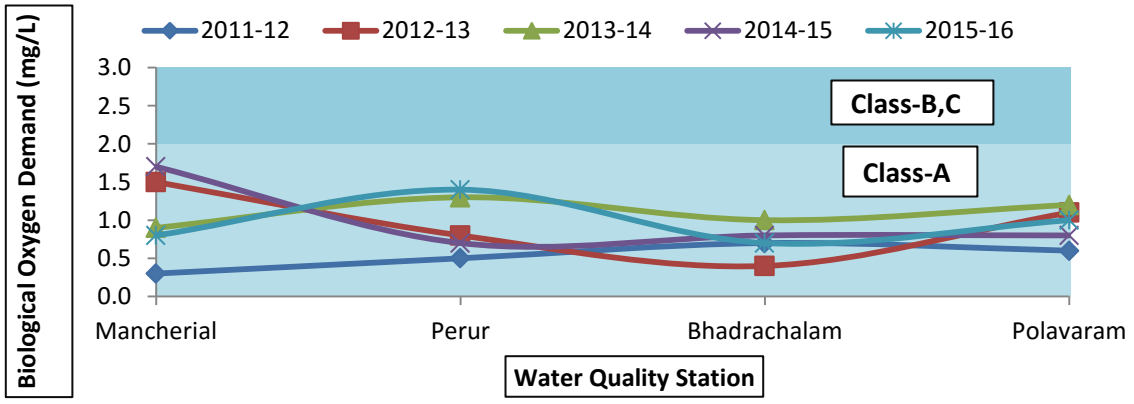
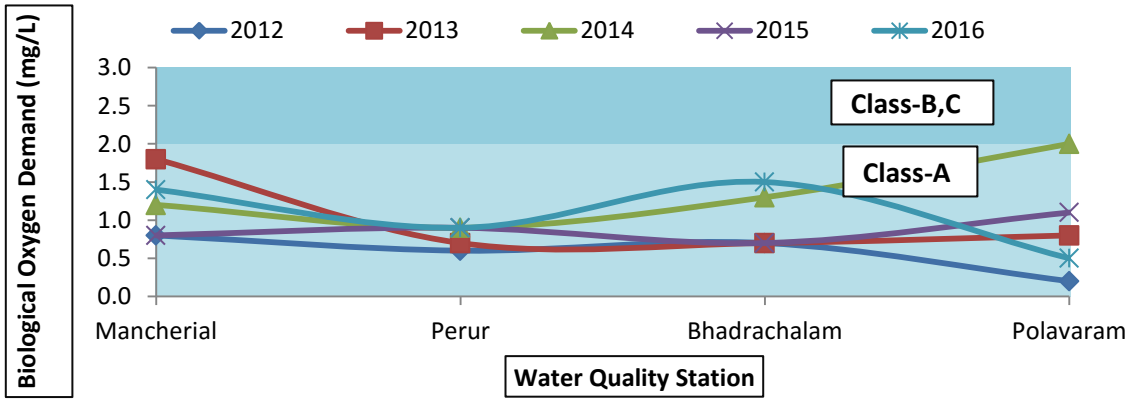


Fig 2.4.6 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for BOD at Godavari Basin



Basin: Godavari (Water Quality Parameter : DissolvedOxygen)

Fig 2.4.7 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for DO at Godavari Basin

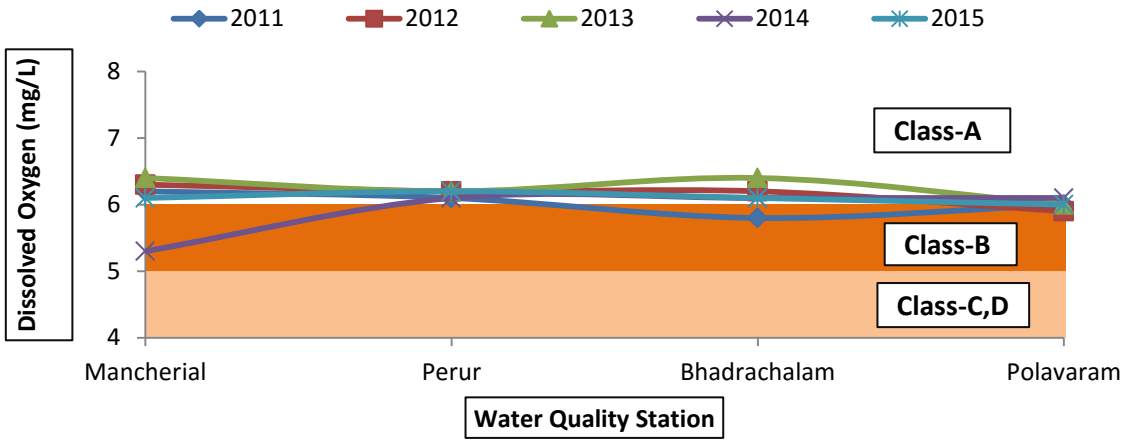


Fig 2.4.8 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for DO at Godavari Basin

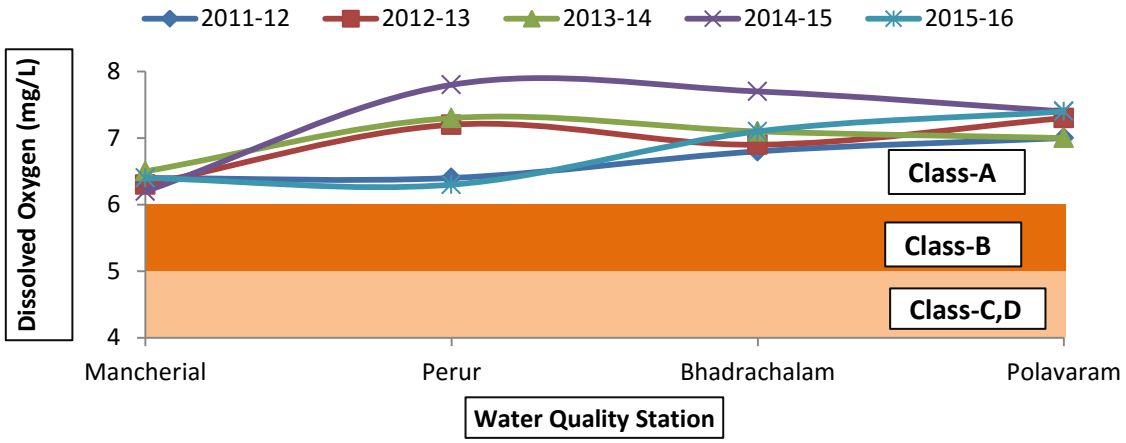
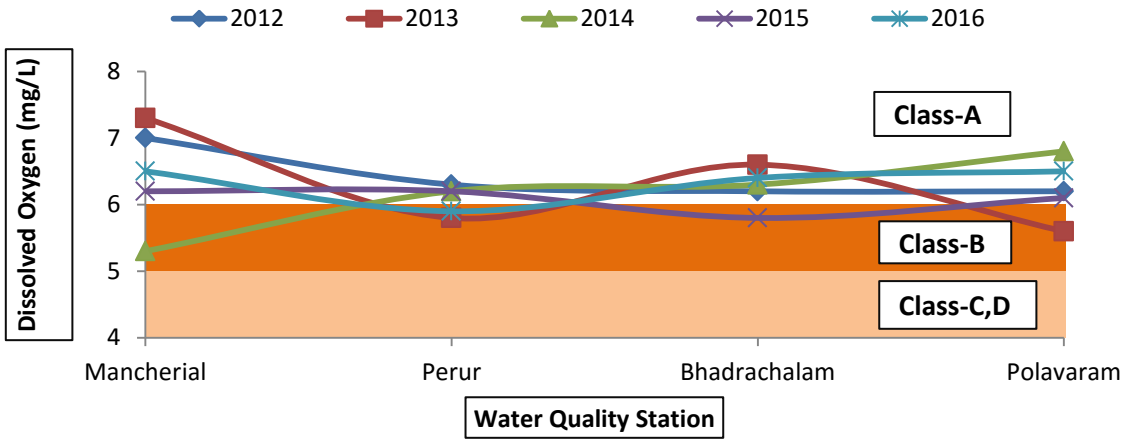


Fig 2.4.9 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for DO at Godavari Basin



Basin: Godavari (Water Quality Parameter :Total Hardness)

Fig 2.4.10 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at Godavari Basin

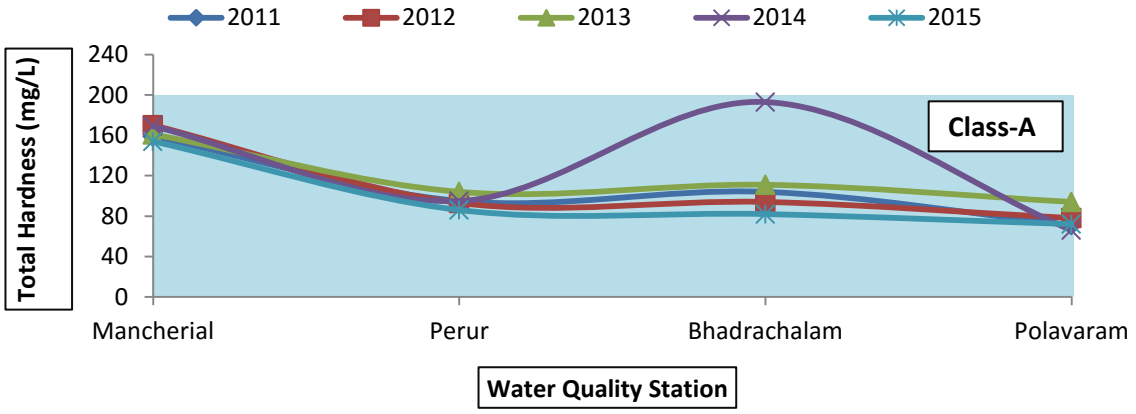


Fig 2.4.11 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for Total Hardness at Godavari Basin

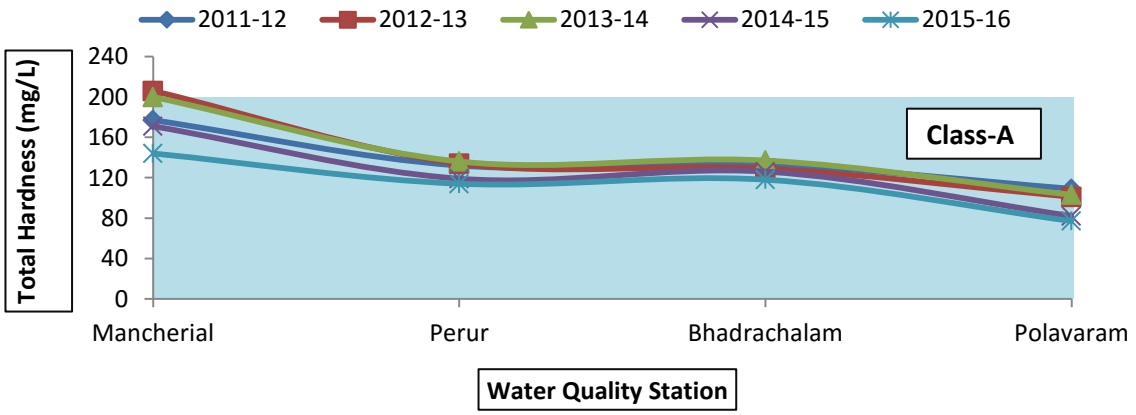


Fig 2.4.12 : Seasonal 5 years trend (2012 to 2016) during Summer (Mar-May) for Total Hardness at Godavari Basin

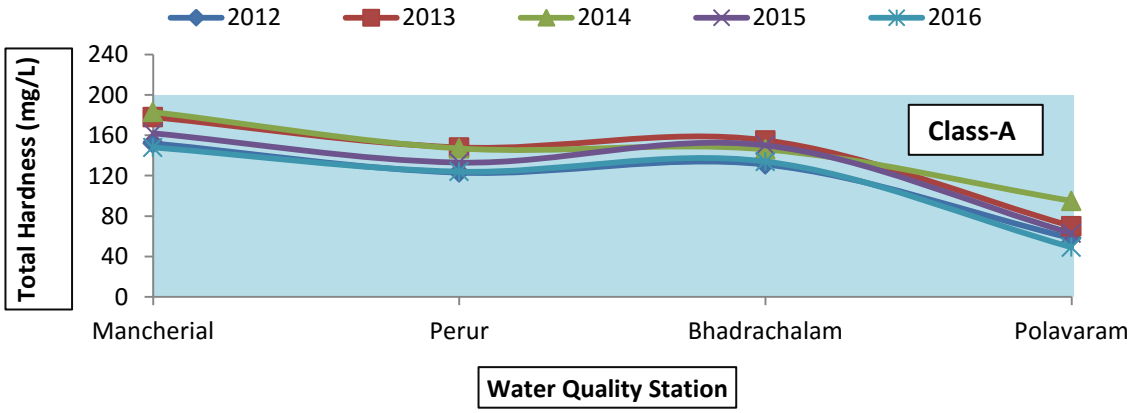
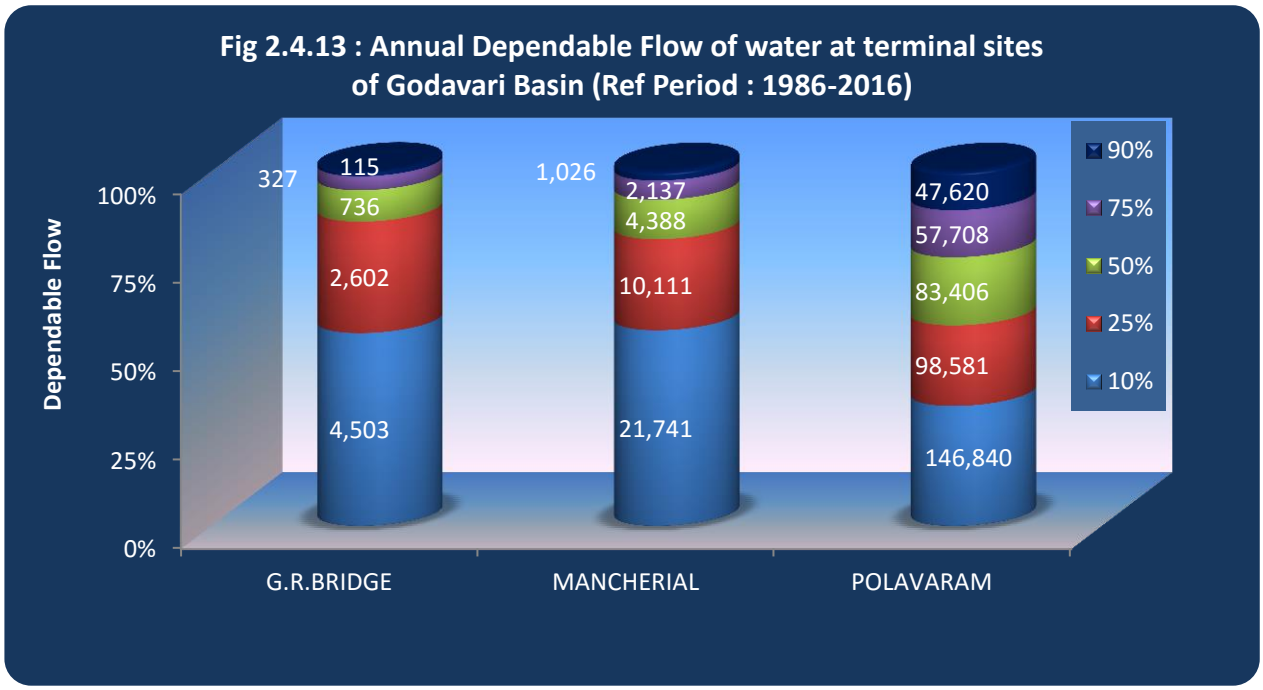


Table 2.4.1: Annual Dependable Flow Of Water at Terminal Sites Of Godavari Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	G.R.BRIDGE	6/1986 to 5/2016	4503.41	2601.99	735.53	327.05	114.67
2	MANCHERIAL		21741.36	10110.64	4388.38	2136.99	1026.24
3	POLAVARAM		146840.03	98580.62	83405.78	57707.75	47620.16

Source : SE, Godavari Circle, CWC, Hyderabad, Wainganga Division, C.GO complex, Block-C, 2nd Floor, Seminary Hills Nagpur



2.4.5 Land Use Statistics: Table 2.4.2 to Table 2.4.4 present the land use pattern, gross irrigated area and net irrigated area for Godavari basin as compared to all basins(Region-III).

TABLE 2.4.2: LAND UTILISATION PATTERN OF GODAVARI AND ALL RIVER BASINS(REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Godavari	142,987.16	52,396.28	16,775.29	9,103.84	16,281.65	48,430.10	11,963.97	60,394.07
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.4.3: GROSS AREA IRRIGATED BY SOURCES OF GODAVARI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Godavari	5,106.38	373.15	5,479.53	1,260.67	8,953.63	6,430.06	15,383.69	845.44	22,969.33
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.4.4: NET AREA IRRIGATED BY SOURCES OF GODAVARI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Godavari	3,367.75	-	3,367.75	1,212.90	6,124.02	5,075.39	11,199.41	721.58	16,501.64
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.4.6 Urban Centre: Nagpur is the most important urban centre in the basin. Other important towns are Nashik, Aurangabad, Warangal, Rajahmundry, and Nizamabad.

2.4.7 Industries: A small part of the enormous forest wealth of the basin is at present utilized as timber and in the manufacture of paper and other timber products. Industries based on agricultural produce are the processing of agricultural commodities like rice milling, cotton ginning, processing, spinning and weaving, manufacture of sugar, manufacture of textiles, extraction of oil from groundnut and other oil seeds.

2.4.8 Minerals: The Godavari basin has a rich variety of mineral wealth spread over vast areas. The principal minerals found are bauxite, manganese, iron ore, Corundum and coal. Other minerals like lead, zinc, and corundum are also found in different parts of the basin.

2.5 KRISHNA BASIN

Location: The Krishna basin extends over an area of 2,58,948 Sq km out of which 26.4% is in Maharashtra, 43.8% is in Karnataka and 29.8% falls in erstwhile Andhra Pradesh. The basin lies between east longitudes $73^0$17' to 81^0 9' and north latitudes $13^0$10' to 19^0 22' in the Deccan plateau. The Krishna rises in the Western Ghats at an altitude of 1337 metre just north of Mahabaleshwar, about 64 km from the Arabian Sea and flows from west to east through the States of Maharashtra, Karnataka and erstwhile Andhra Pradesh to join the Bay of Bengal. The total length of the river from the sources to its outfall in the sea is about 1,401 km of which 612 km are in erstwhile Andhra Pradesh, 306 km in Maharashtra and 483 km in Karnataka. Together with its tributaries, the river drains about 708 km of the Western Ghats, which is its chief source of supply. The Ghataprabha, the Malaprabha, the Bhima, the Tungabhadra, Munneru and Musi are the principal tributaries. The Krishna basins' predominant land use is agriculture.

The Krishna basin is bounded in the north by the ridge separating it from the Godavari basin in the south and in east by the Eastern Ghats and in the west by the Western Ghats. The basin is roughly triangular in shape with its base along the Western Ghats, the apex at Vijayawada and the Krishna itself forming the median. All the major tributaries draining the base of the triangle fall into the river in the upper two-thirds of its length.

The Krishna river rises in the western Ghats at an altitude of 1337 metre just north of Mahabaleswar, about 64 km. from the Arabian Sea and flows from west to east through the States of Maharashtra, Karnataka and erstwhile Andhra Pradesh before it joins the Bay of Bengal downstream of Vijayawada.

There are about 13 major tributaries which join river Krishna along its 1400 km. course, out of which six are right bank tributaries and seven are left bank tributaries. Among the major tributaries, the Ghataprabha, the Malaprabha and the Tunga Bhadra are the principal right bank tributaries which together account for 35.45% of the total catchment whereas the Bhima, the Musi and the Munneru are the principal left bank tributaries which together account for 35.62% of the total catchment area.

The average annual rainfall in the Krishna basin is 784 mm. The South West Monsoon sets in by middle of June and withdraws by the middle of October. About 90% of annual rainfall is received during the Monsoon months, of which more than 70% occurs during July, August and September.

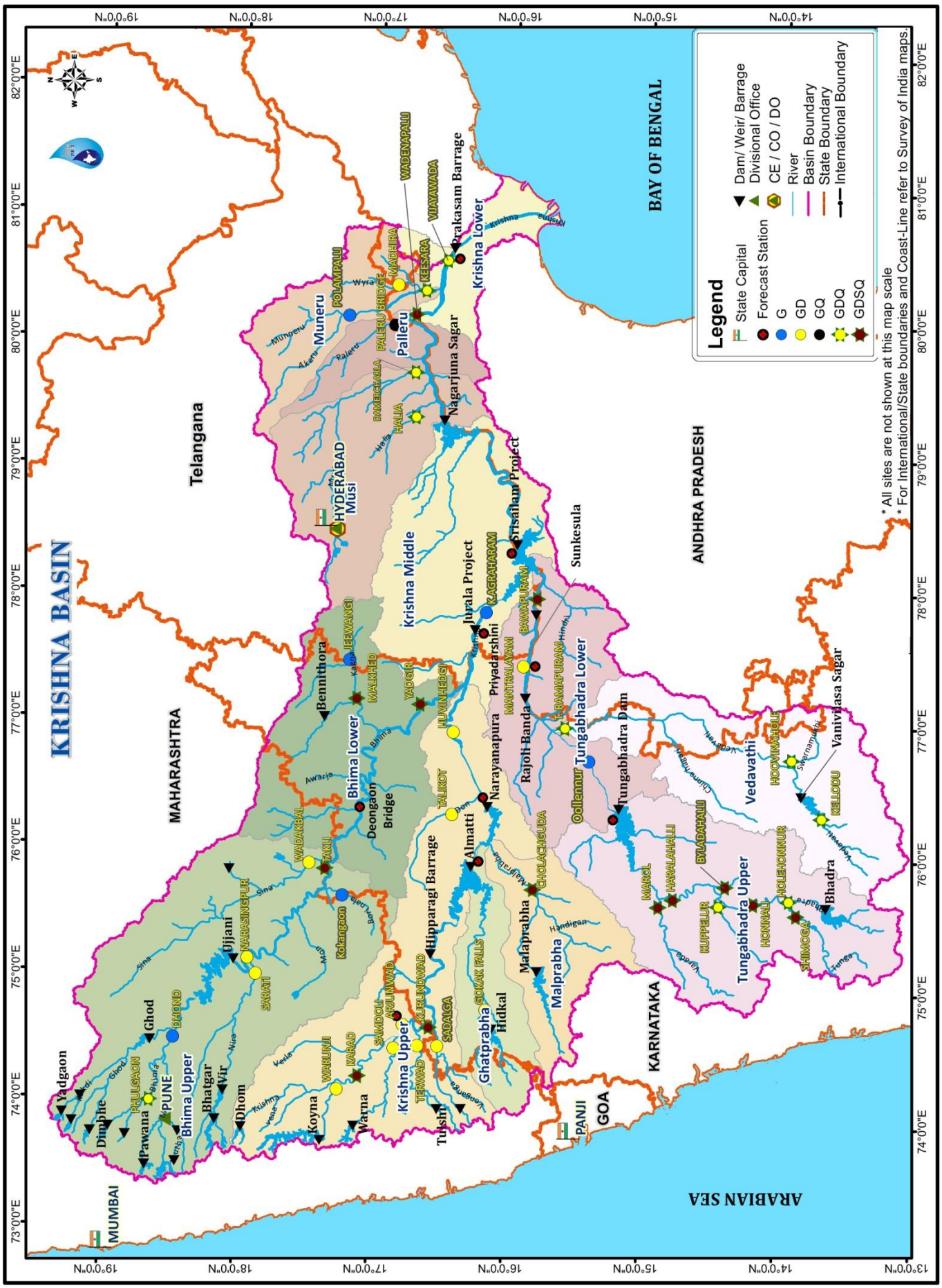
Though few major projects like Krishna delta were in existence prior to independence, planned development of water resources of Krishna basin took place after independence. The completed important major projects in Krishna basin are Koyna and Ujjani projects in Maharashtra state.

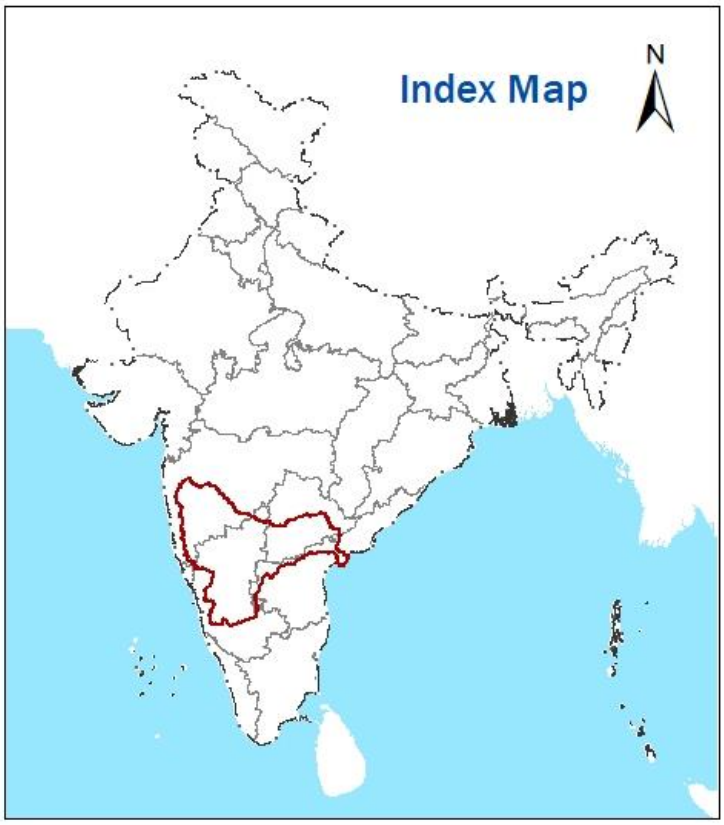
2.5.1 Irrigation projects: Radhanagari, Ghod, Almatti Dam, Khadakwasla, Vir Dam, Koyna, Tungabhadra, Bhadra, Musi Project, Nagarjuna Sagar, Srisailam, P.D.Jurala and Prakasam Barrage are the major projects in the catchment areas of the river basin.

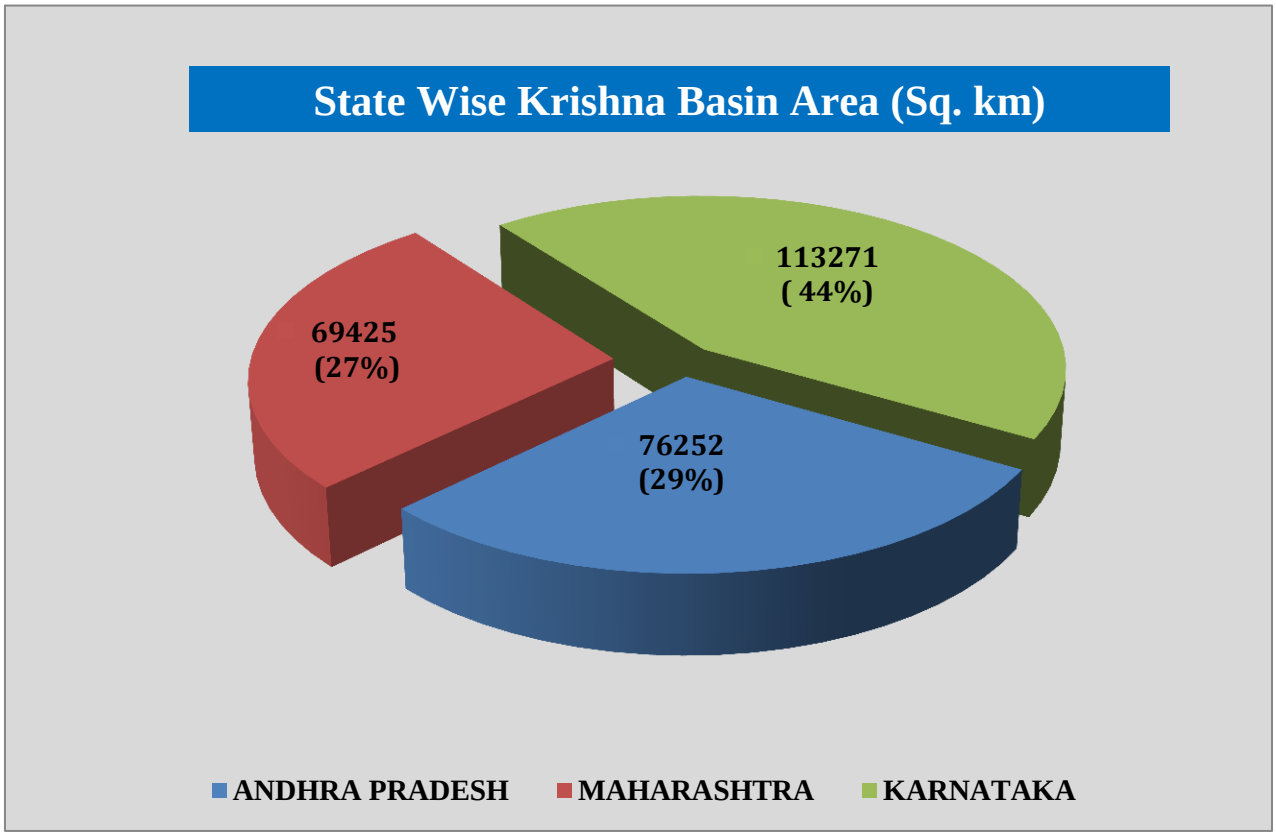
2.5.2 Hydrological Observation Sites: As per 2015-16 data, there are 40 hydrological observation stations in the basin. Sediment observations are made at 29 of these stations. In addition, gauge,discharge observations are being measured in these stations.

2.5.3 Peak Water Level: It has 38 sites in all for hydrological observations. Among these sites, peak water level varied from 19.27 metreat Vijaywada site (minimum) to 650.25metre at Kellodu site (maximum) during the reference period 2015-16.

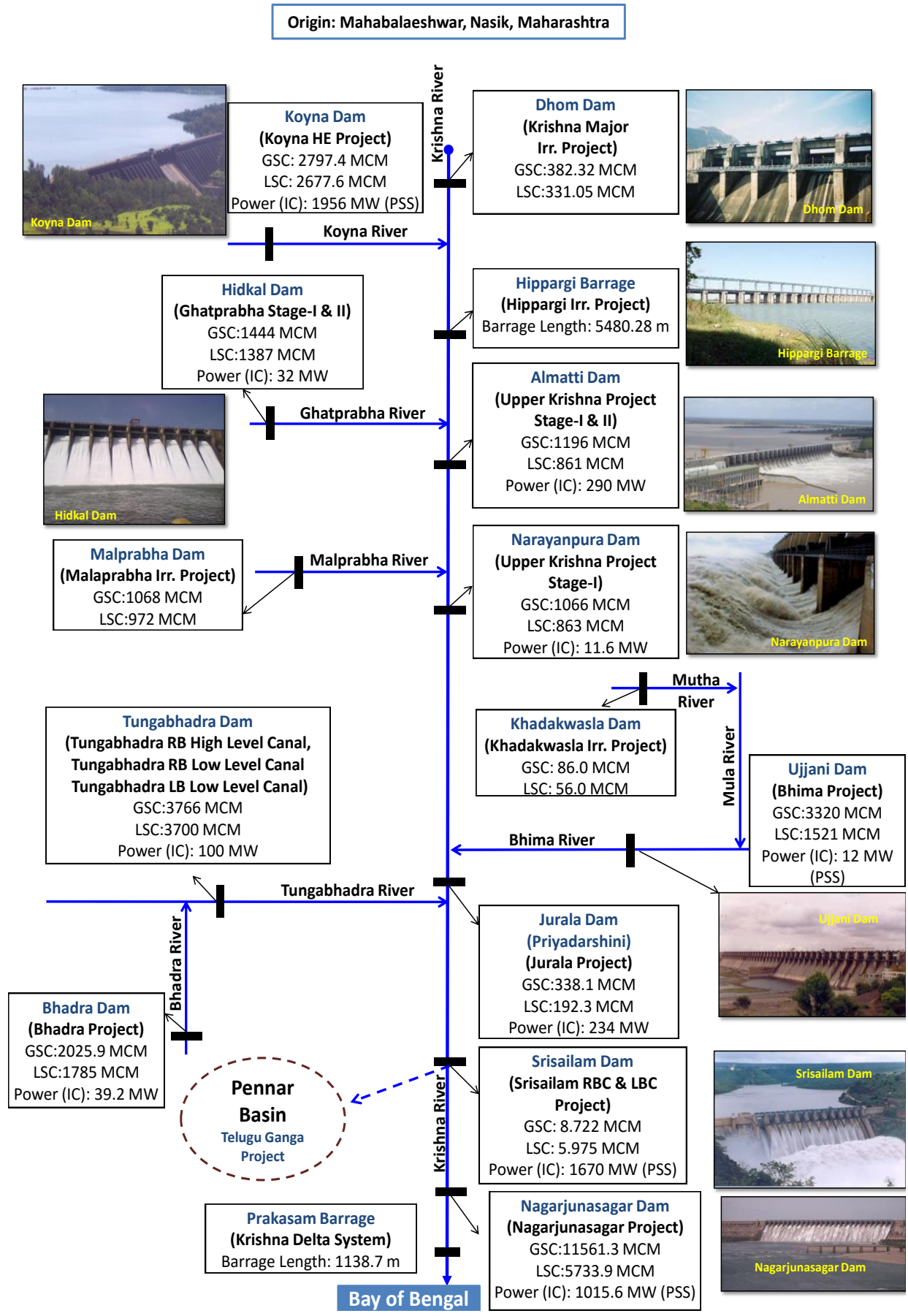
2.5.4 Water Quality: Temporal trends of water quality parameters viz. pH,BOD,DO, Total hardness are given below for three/four sites of Krishna basin (Fig 2.5.1 to Fig 2.5.8).


KRISHNA BASIN
MAHARASHTRA
Telangana
ANDHRA PRADESH
KARNATAKA
GOA
BAY OF BENGAL
ARABIAN SEA
MUMBAI
PUNE
HYDERABAD
PANJI
Legend
State Capital
Forecast Station
G
GD
GQ
GDQ
GDSQ
Dam/ Weir/ Barrage
Divisional Office
CE / CO / DO
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
Prakasam Barrage
Krishna Lower
Nagarjuna Sagar
Srisailam Project
Jurala Project
Krishna Middle
Sunkesula
Bennithora
Bhima Lower
Deongaon Bridge
Hipparagi Barrage
Almatti
Narayanapura
Priyadarshini
Rajoli Banda
Tungabhadra Dam
Tungabhadra Upper
Vanivilasa Sagar
Vedavathi
Bhadra
Krishna Upper
Ghatprabha
Hidkal
Malaprabha
Ujjani
Yadgaon
Dimbhe
Pawana
Bhima Upper
Bhatgar
Vir
Dhom
Koyna
Warna
Tulshi
Ghod
Muneru
Palleru


Index Map
N


State Wise Krishna Basin Area (Sq. km)
113271
(44%)
69425
(27%)
76252
(29%)
ANDHRA PRADESH
MAHARASHTRA
KARNATAKA

Krishna River Flow Line Diagram



Basin: Krishna (Water Quality Parameter : pH)

Fig 2.5.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Krishna Basin

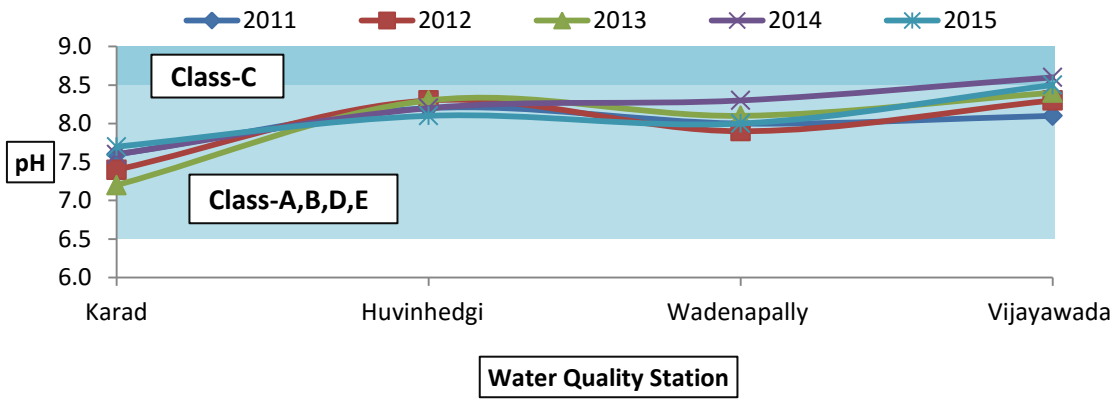
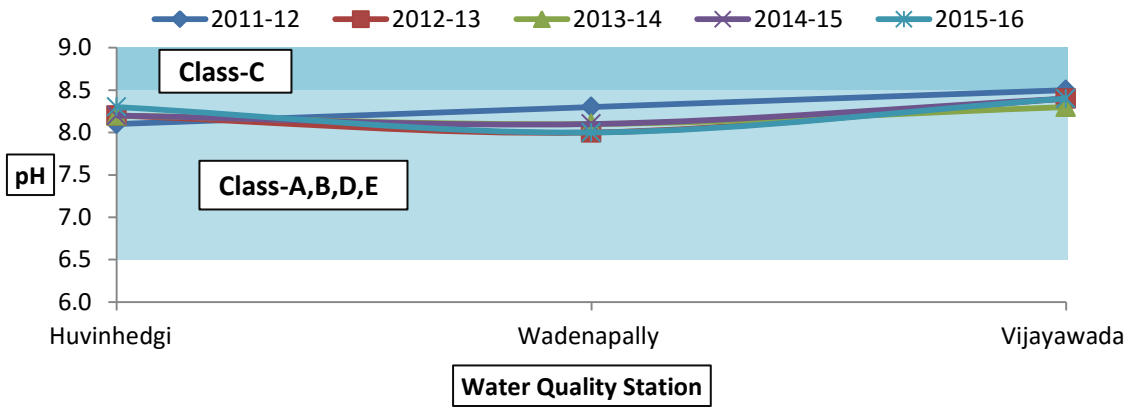


Fig 2.5.2 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for pH at Krishna Basin



Basin: Krishna (Water Quality Parameter :Biological Oxygen Demand)

Fig 2.5.3 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Krishna Basin

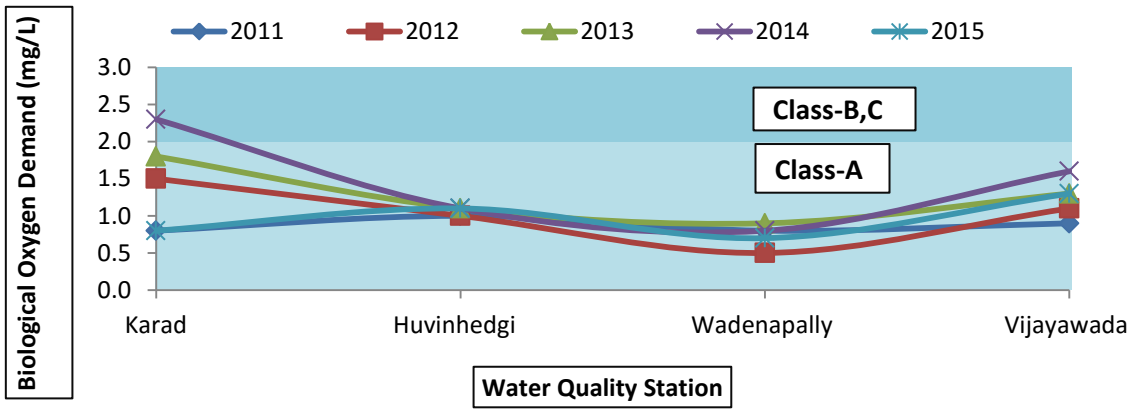
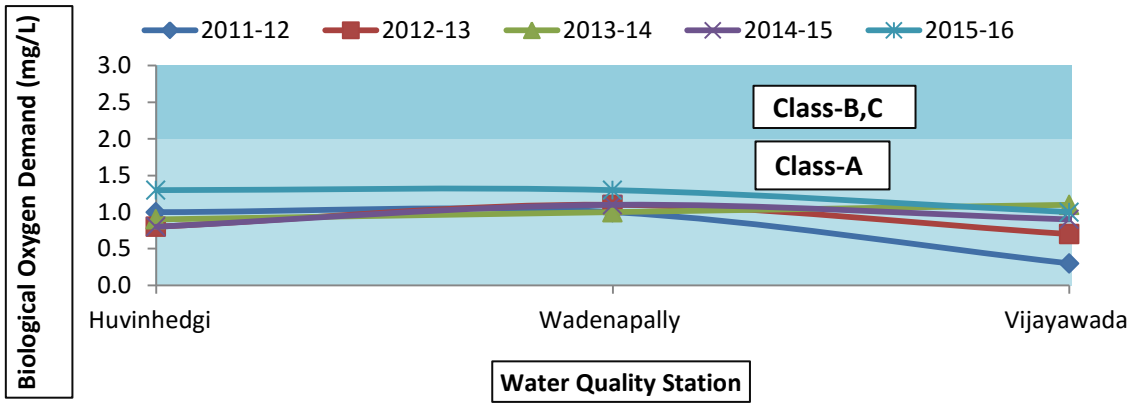


Fig 2.5.4 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for BOD at Krishna Basin



Basin: Krishna (Water Quality Parameter :Dissolved Oxygen)

Fig 2.5.5 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for DO at Krishna Basin

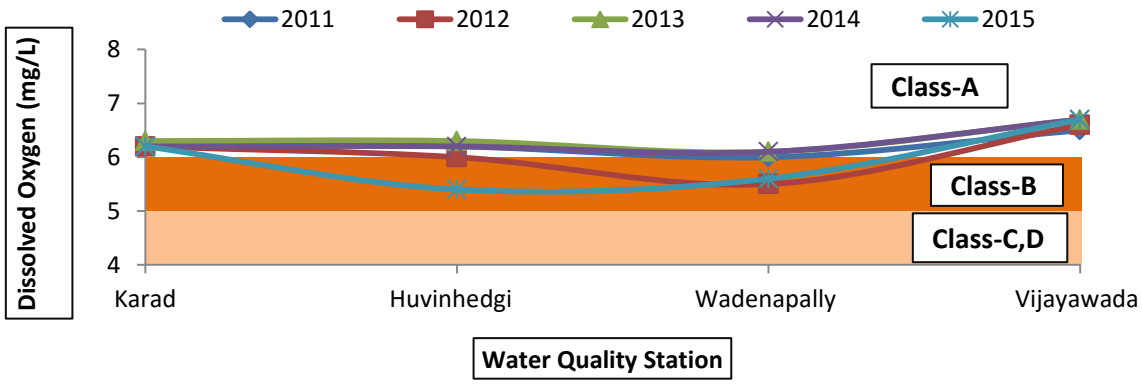
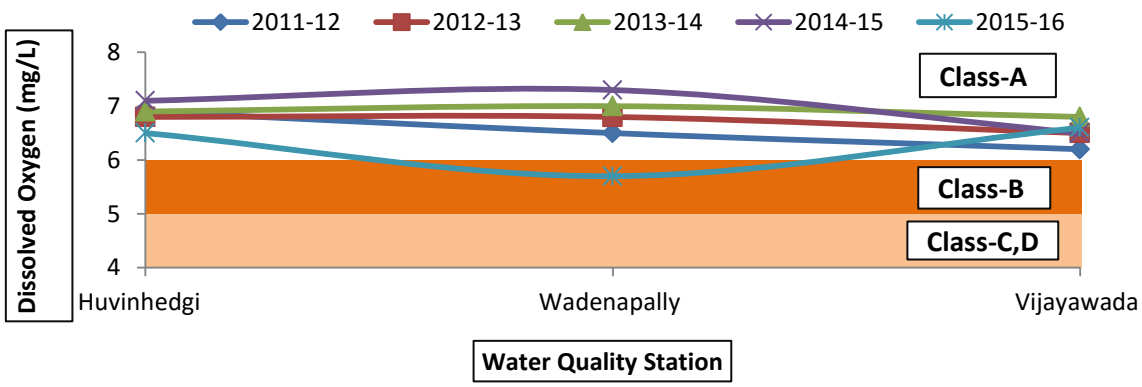


Fig 2.5.6 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for DO at Krishna Basin



Basin: Krishna (Water Quality Parameter :Total Hardness)

Fig 2.5.7 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at Krishna Basin

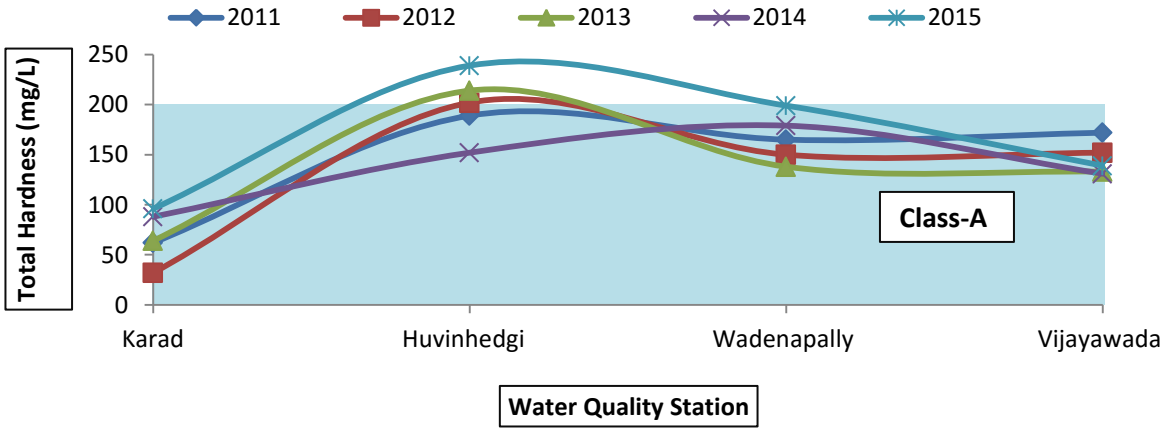


Fig 2.5.8 : Seasonal 5 years trend (2011 to 2015) during Winter (Nov-Feb) for Total Hardness at Krishna Basin

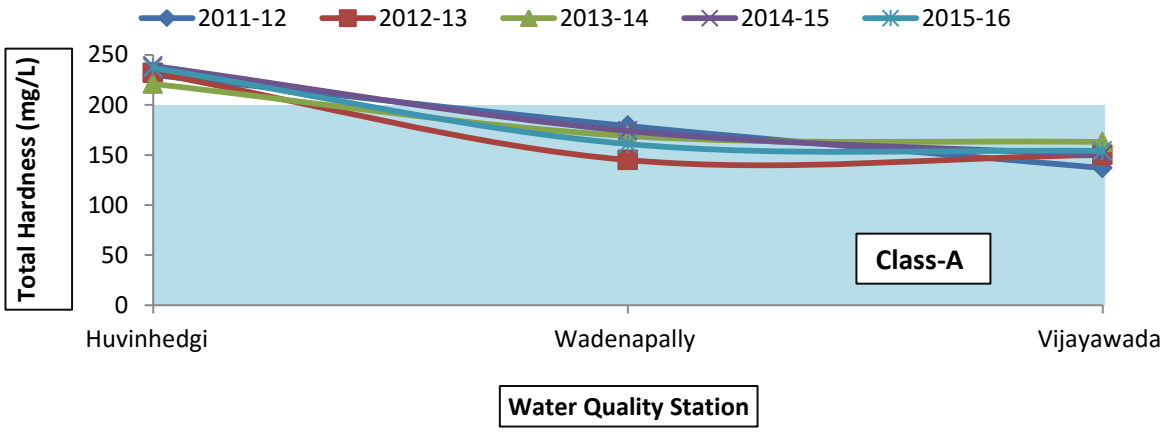
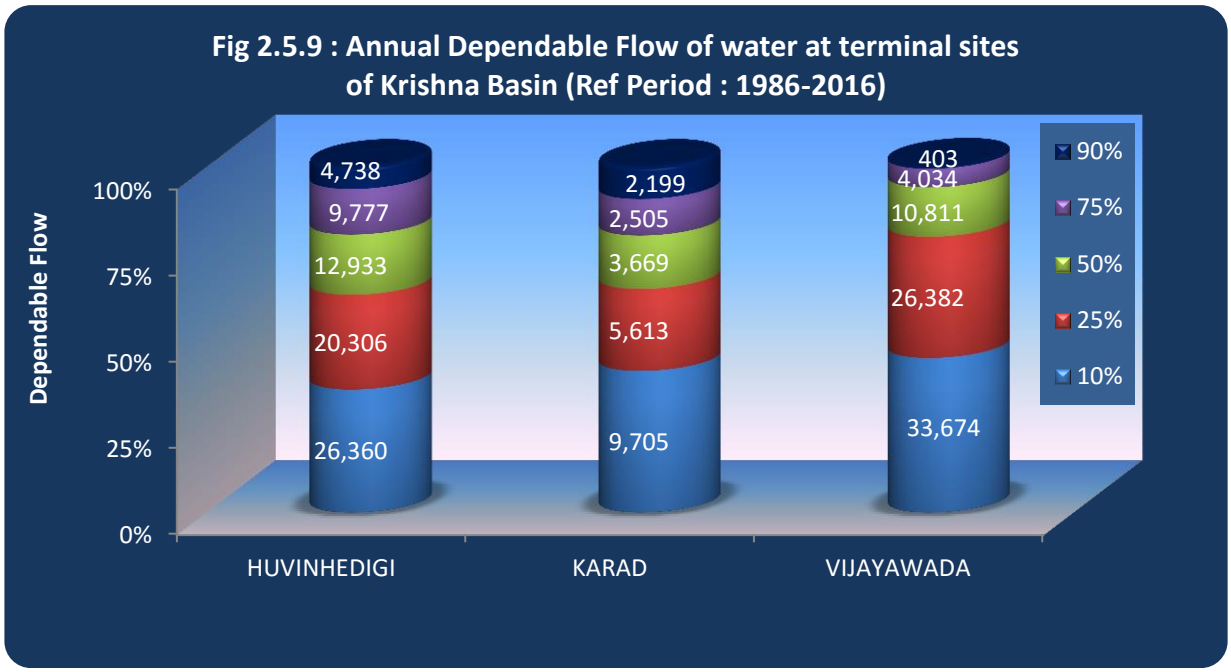


Table 2.5.1: Annual Dependable Flow of Water at Terminal Sites of Krishna Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	HUVINHEDIGI	6/1986 to 5/2016	26360.33	20306.05	12933.30	9776.53	4738.31
2	KARAD		9704.84	5613.30	3668.94	2504.62	2199.28
3	VIJAYAWADA		33673.84	26381.67	10811.00	4034.00	402.67

Source : SE, Godavari Circle, Central Water Commission, Hyderabad, Krishna Basin



2.5.5 Land Use Statistics: Table 2.5.2 to Table 2.5.4 present the land use pattern, gross irrigated area and net irrigated area for Krishna basin as compared to all basins(Region-III).

TABLE 2.5.2: LAND UTILISATION PATTERN OF KRISHNA AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Krishna	185,450.91	28,382.58	22,142.50	11,533.53	29,994.02	93,398.29	18,292.34	111,690.63
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.5.3: GROSS AREA IRRIGATED BY SOURCES OF KRISHNA AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Krishna	10,128.86	-	10,128.86	1,310.21	20,025.29	4,928.05	24,953.34	4,426.39	40,818.81
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.5.4: NET AREA IRRIGATED BY SOURCES OF KRISHNA AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Krishna	9,029.06	-	9,029.06	1,272.70	16,139.10	4,024.51	20,163.62	3,824.34	34,289.72
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.5.6 Urban Centres: The major cities in the basin are Pune, Hyderabad & Vjayawada.

2.5.7 Industries: The main industries in the catchment are Textiles, Sugar, Chemical, Cement factories, Automobiles, Engineering goods, Nuclear energy related.

2.5.8 Minerals: The important minerals found in the catchment are gold, bauxite, lime stone, iron ore, manganese ore, quartz, copper, red oxide, soapstone, etc.

2.6 CAUVERY BASIN

Location: The Cauvery river originates at Talakaveri in Coorg District of Karnataka in Brahmagiri Range of hills in the Western Ghats at an elevation of 1,341 metre and drains a total of 81,155 Sq km area of which 34,273 Sq km lies in Karnataka, 43,856 sq km in Tamil Nadu, 2,866 sq km in Kerala and 160 sq km in the Union Territory of Puducherry. The basin lies between east longitudes 75^0 27' to 79^0 54' and north latitudes 10^0 9' to 13^0 30'. The Cauvery basin is bounded by Tungabhadra sub-basin of Krishna basin in the northern side and Palar sub-basin in the southern side. The Western Ghats form the western boundary.The Nilgiris, an offshore of Western Ghats, extend eastwards to the Eastern Ghats and divide the basin into two natural and political regions i.e. Karnataka plateau in the north and the Tamil Nadu plateau in the south. In Tamil Nadu, the eastern part of the basin is in the elevation range of 0 to 150 metre sloping gently up from the sea.

At Shivanasamudram, the river branches off into two parts and falls through a height of 91 metre. in a series of falls and rapids. The falls at this point is utilised for power generation. The power station at Shivanasamudram was built as early as 1902. The two branches of the river join after the falls and flows through a wide gorge which is known as "Mekedatu" (Goats leap) and continues its journey and forms the boundary between Karnataka and Tamil Nadu States for a distance of 64 kms. At Hogennekkal Falls, it takes southernly direction and enters the Mettur Reservoir, which was constructed in 1934. A tributary called Bhavani joins Cauvery on the right bank about 45 kms below Mettur Reservoir, thereafter it takes easternly course to enter the plains of Tamil Nadu. Two more tributaries Noyyal and Amaravathi join on the right bank and here the river widens with sandy bed and flows as "Akhanda Cauvery".

Immediately after crossing Tiruchirappalli district, the river divides into two parts, the northern branch being called "The Coleron" and southern branch remains as Cauvery and from here the Cauvery Delta begins. After flowing for about 16 kms, the two branches join again to form "Srirangam Island". On the Cauvery branchlies the“Grand Anicut” said to have been constructed by a Chola King in 2^{nd}Century AD. Below the Grand Anicut, the Cauvery branch splits into two, Cauvery and Vennar. These branches divide and sub-divide into small branches and form a network all over the delta.

The total length of the river from the origin to its outfall into the sea is 800 kms of which 320 kms is in Karnataka, 416 kms in Tamil Nadu and 64 kms forms the common border between the Karnataka and Tamil Nadu states. The Cauvery basin is fan shaped in Karnataka and leaf shaped in Tamil Nadu. The run-off does not drain off quickly because of its shape and therefore no fast rising floods occur in the basin. In the Cauvery basin, four distinct seasons occur viz. (i) Cold weather, (ii) Hot weather, (iii) South West Monsoon and (iv) North-East Monsoon. The basin is mainly influenced by South-West Monsoon inKarnataka & Kerala and North-East Monsoon in Tamil Nadu.

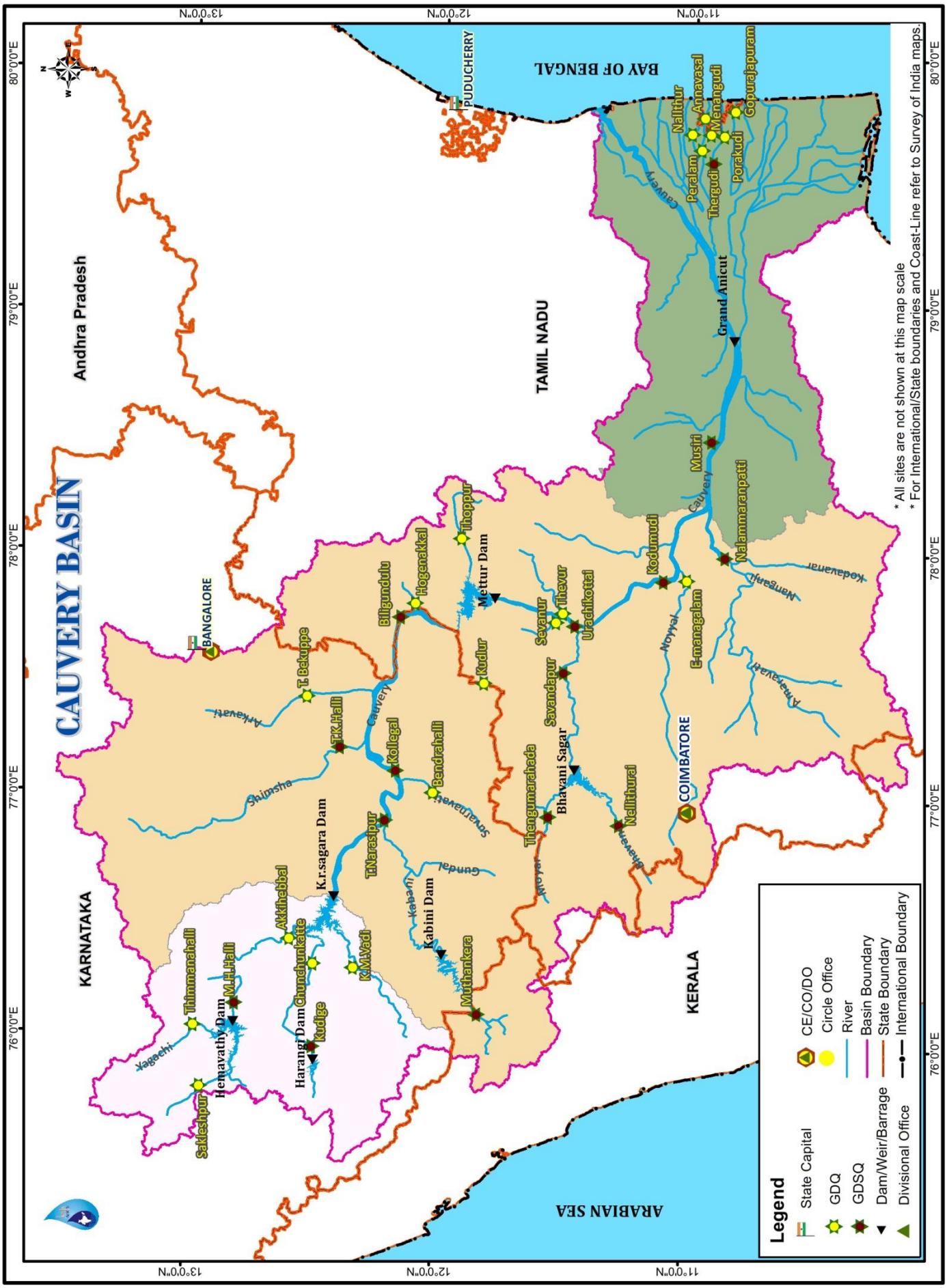
The Cauvery river system consists of 21 principal tributaries each with catchment area exceeding 250 sq km. The largest of all of them are theCatchment Area Shimsha, lying wholly in Karnataka, the Amaravathi rising in Kerala but lying mostly in Tamil Nadu and the Kabini rising in both Kerala and Tamil Nadu but lying mostly in Karnataka. The Bhavani is the fourth largest and the second longest. It rises in Kerala and Karnataka but lies mostly in Tamil Nadu. The longest tributary, the Hemavathi (245 kms) is the fifth largest river in catchment area and lies wholly in Karnataka. From the point of view of flow contribution to the system, apart from the head reach of the Cauvery main, the most important tributaries are i) the Hemavathi, ii) the Kabini and iii) the Bhavani.

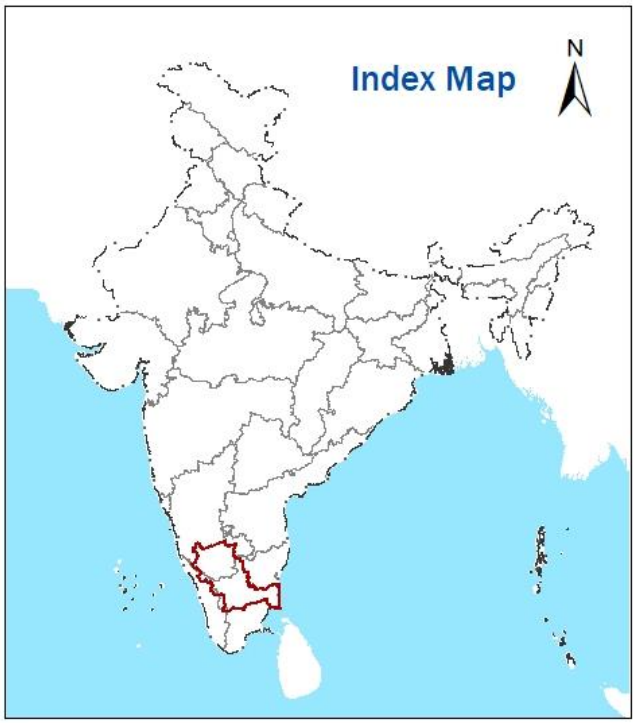
2.6.1 Irrigation Projects: Krishnaraja Sagar Dam, Bhavani Sagar Dam, Hemavathi Dam, Grand Anicut, Lower Coleroon Anicut, Kabini Dam, Harangi Dam and Mettur Dam are the major projects in the catchment areas of the river basin.

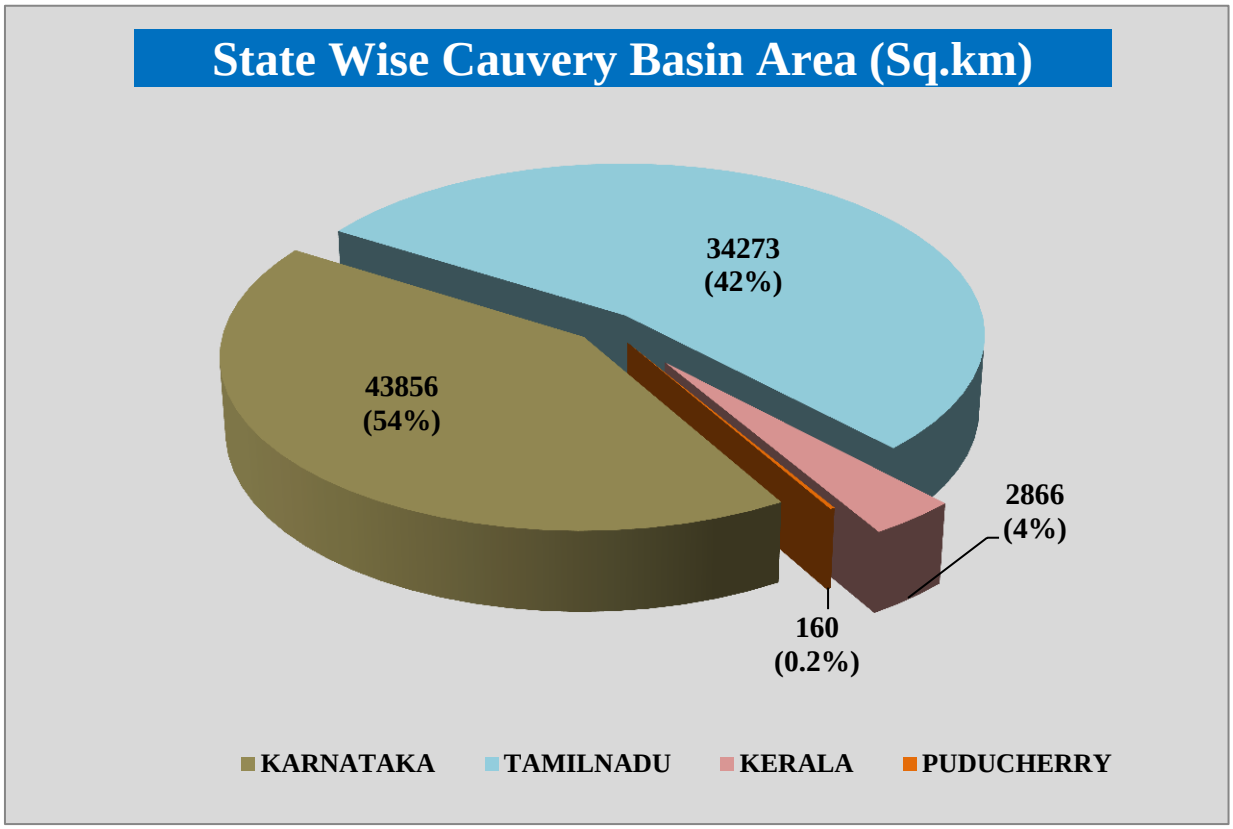
2.6.2 Hydrological Observation (H.O.)Sites: There are 35 H.O. sites in the basin, out of which gauge and water quality are being monitored at all sites, sediment observations are being collected at 21 sites (as per 2015-16 data).

2.6.3 Peak Water level: : In Cauvery basin, it is remarkable to note that four sites i.e. MH Halli, Thimmanahalli, Sakleshpur and Kudige out of 35 reported sites have registered peak water level above 800 metre. The peak water level has increased with the increase in the value of latitude with some exceptional cases.

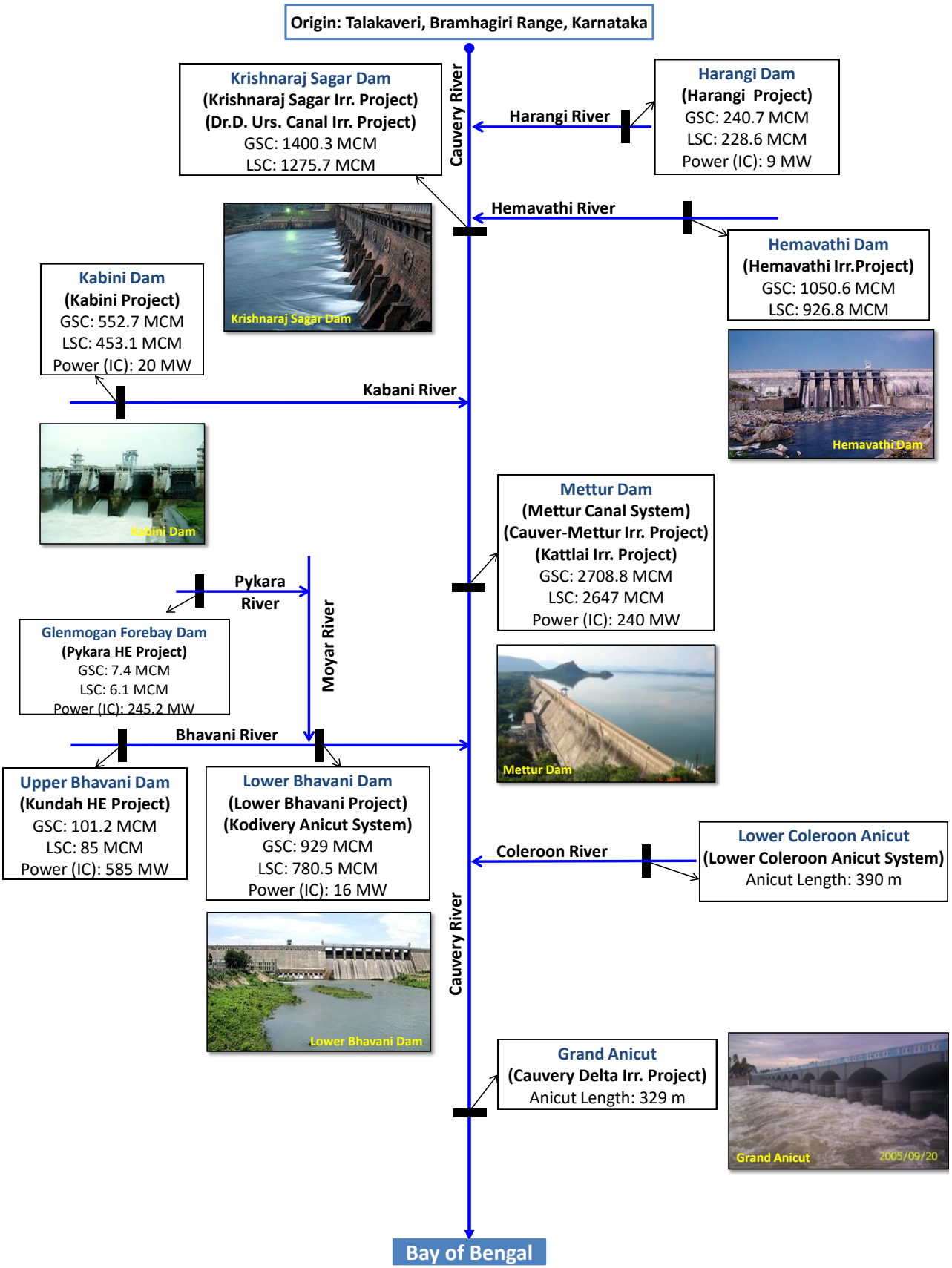
2.6.4 Water Quality: Temporal trends of water quality parameters viz. pH,BOD,DO, Total hardness are given below for seven sites of Cauvery basin (Fig 2.6.1 to Fig 2.6.12).


CAUVERY BASIN
Andhra Pradesh
TAMIL NADU
KARNATAKA
KERALA
BAY OF BENGAL
ARABIAN SEA
PUDUCHERRY
BANGALORE
COIMBATORE
Grand Anicut
Mettur Dam
K.r.sagara Dam
Kabini Dam
Hemavathy Dam
Harangi Dam
Bhavani Sagar
Musiri
Nallithur
Annavasal
Menangudi
Gopurajapuram
Peralam
Thergudi
Porakudi
Thoppur
Hogenakkal
Biligundulu
T. Bekuppe
T.K.Halli
Kollegal
Bendrahalli
T.Naresipur
Akkihebbal
Chunchunkatte
K.M.Vadi
Kudige
Thimmenahalli
M.H.Halli
Sakleshpur
Muthankera
Tinengumarahada
Savandapur
Kudlur
Sevanur
Thevur
Urachikottai
Kodumudi
Nalammaranpatti
E-managalam
Nellithurai
Cauvery
Kabani
Hemavathy
Harangi
Shimsha
Arkavati
Suvarnavati
Gundal
Noyyal
Kodavanar
Nambiyar
Amaravati
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
Legend
State Capital
GDQ
GDSQ
Dam/Weir/Barrage
Divisional Office
CE/CO/DO
Circle Office
River
Basin Boundary
State Boundary
International Boundary


Index Map
N


State Wise Cauvery Basin Area (Sq.km)
34273
(42%)
43856
(54%)
2866
(4%)
160
(0.2%)
KARNATAKA
TAMILNADU
KERALA
PUDUCHERRY

Cauvery River Flow Line Diagram



Basin: Cauvery (Water Quality Parameter : pH)

Fig 2.6.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Cauvery Basin

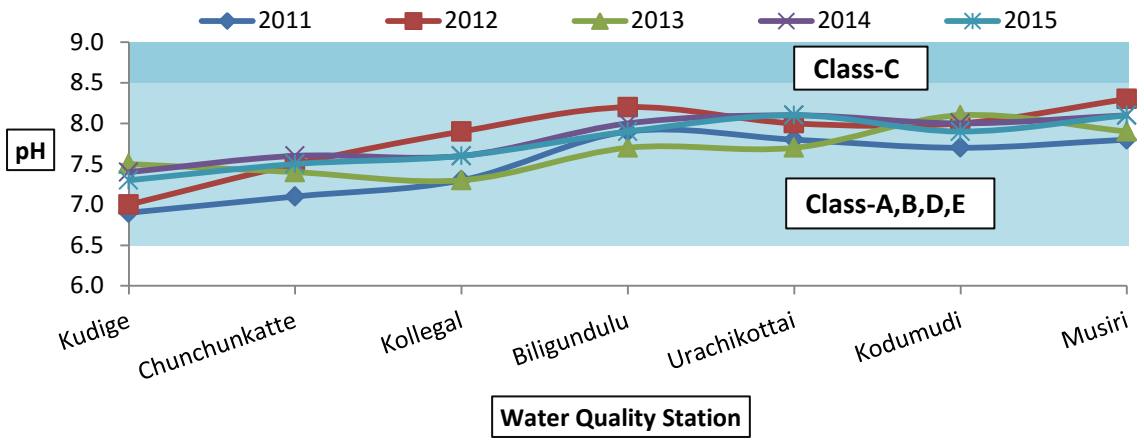


Fig 2.6.2 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for pH at Cauvery Basin

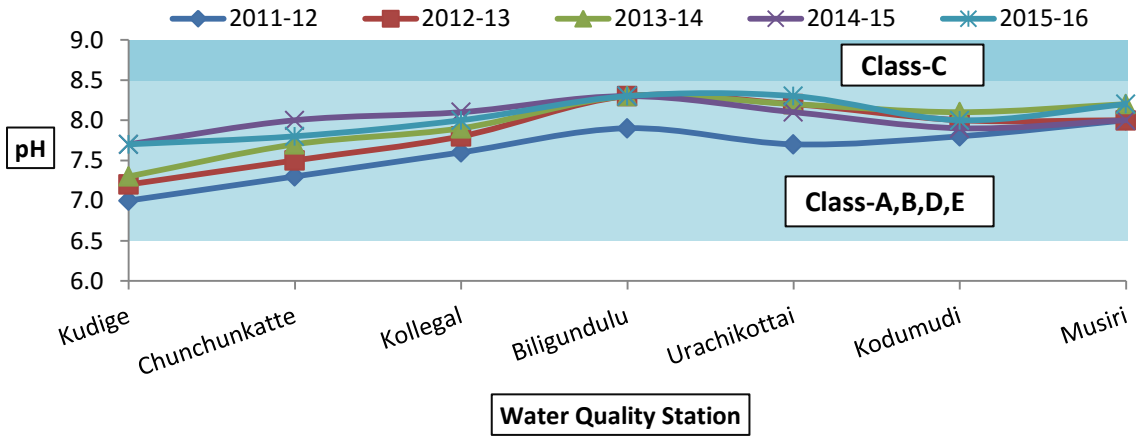
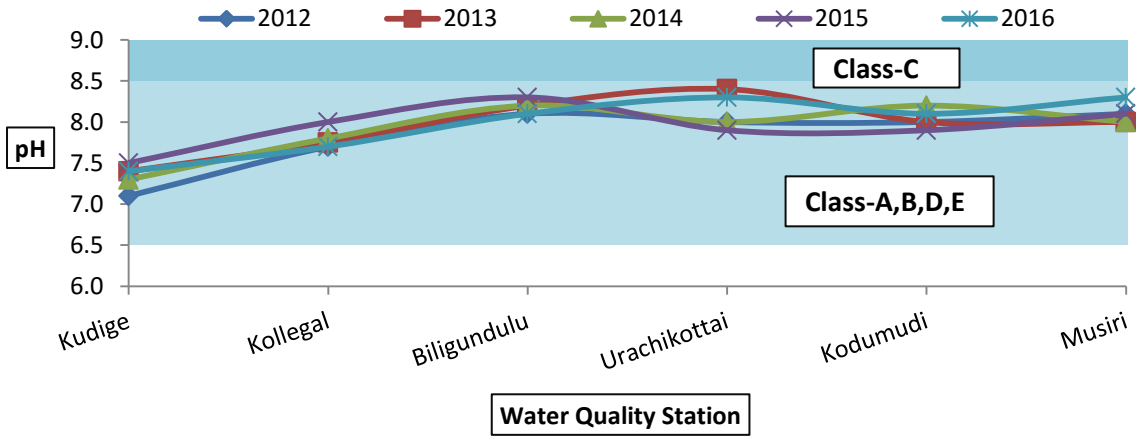


Fig 2.6.3 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for pH at Cauvery Basin



Basin: Cauvery (Water quality Parameter : Biological Oxygen Demand)

Fig 2.6.4 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Cauvery Basin

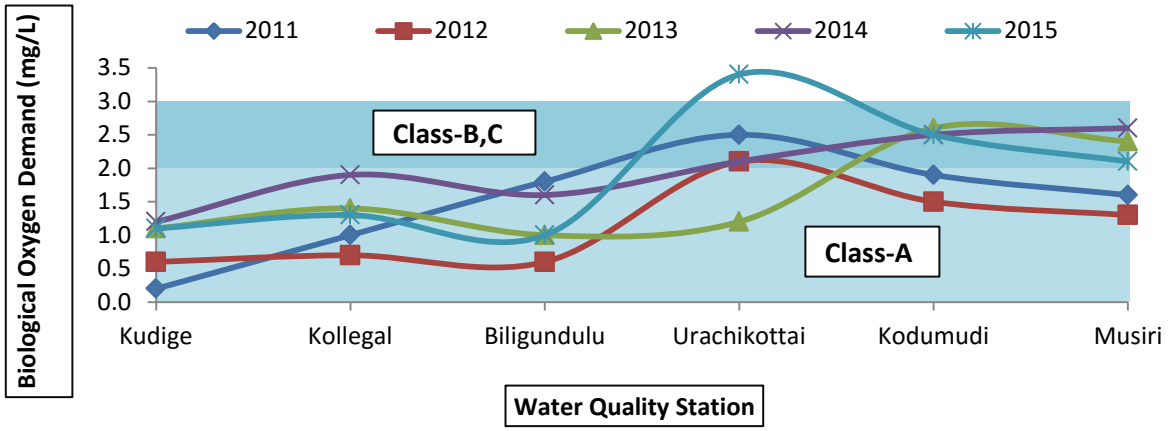


Fig 2.6.5 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for BOD at Cauvery Basin

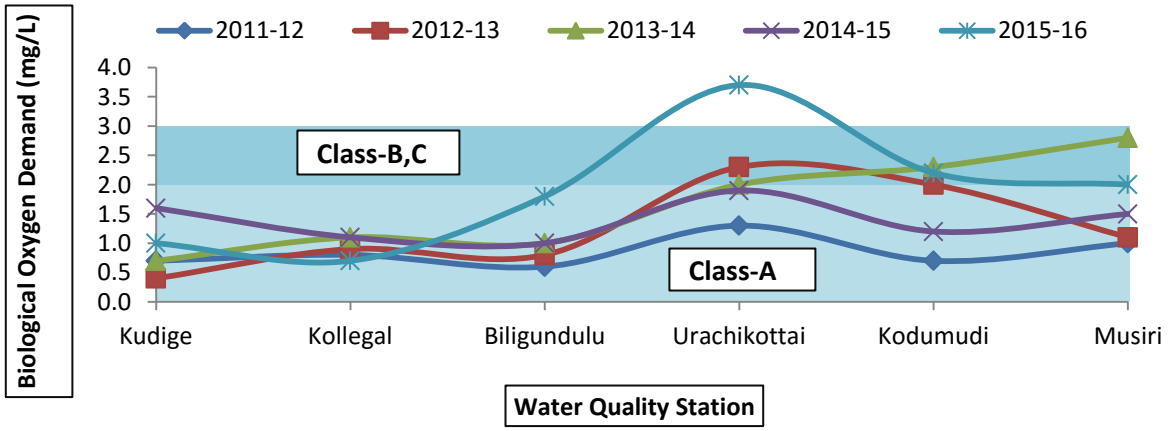
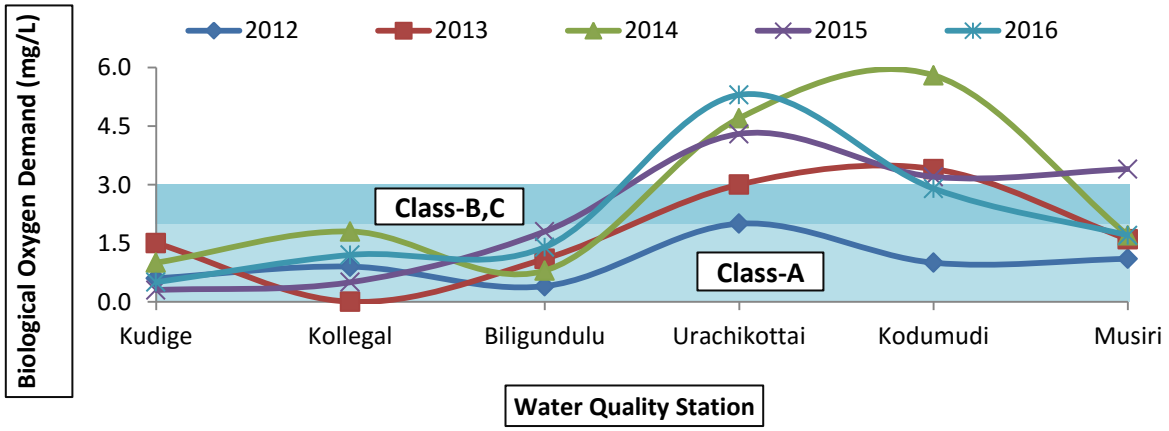


Fig 2.6.6 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for BOD at Cauvery Basin



Basin: Cauvery (Water Quality Parameter : DissolvedOxygen)

Fig 2.6.7 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for DO at Cauvery Basin

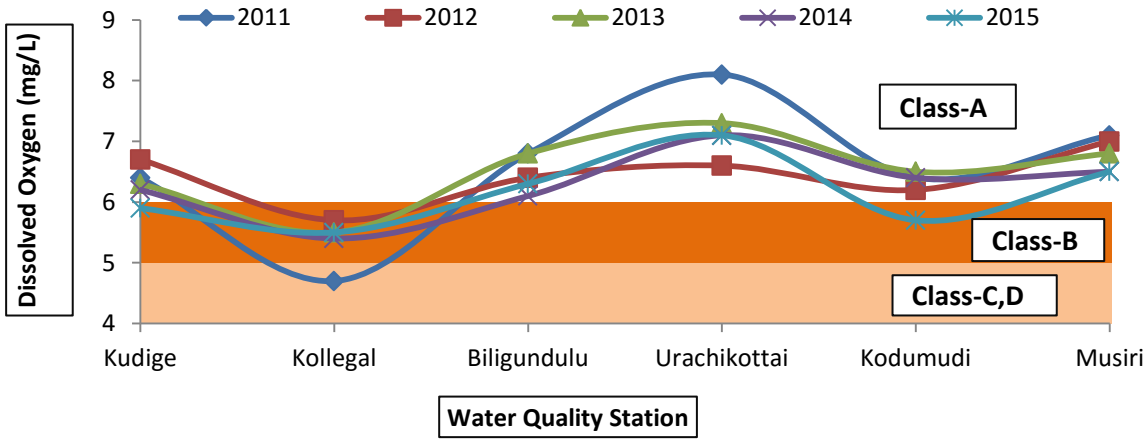


Fig 2.6.8 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for DO at Cauvery Basin

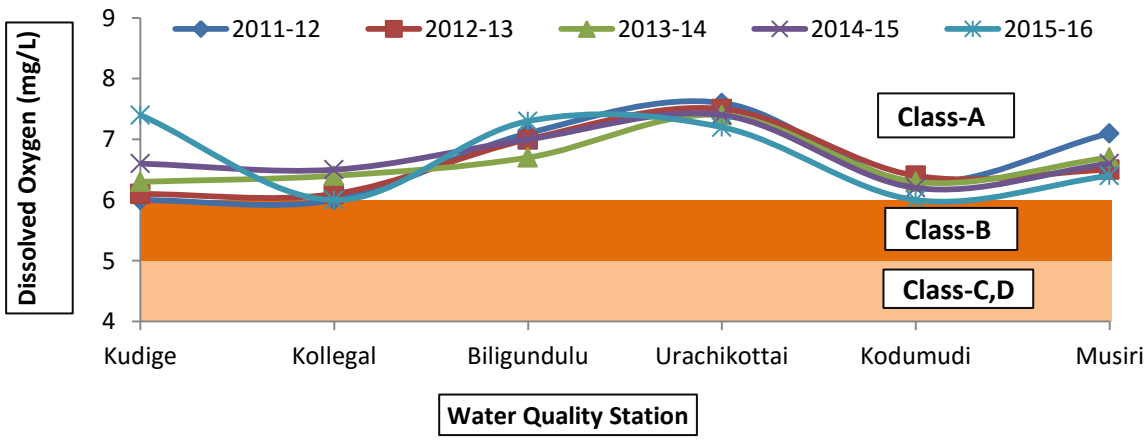
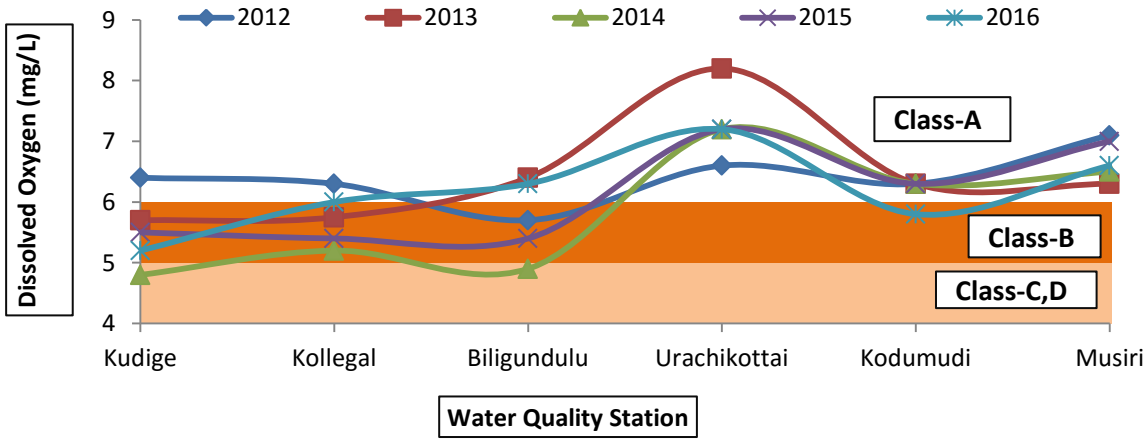


Fig 2.6.9 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for DO at Cauvery Basin



Basin: Cauvery (Water Quality Parameter : Total Hardness)

Fig 2.6.10 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at CauveryBasin

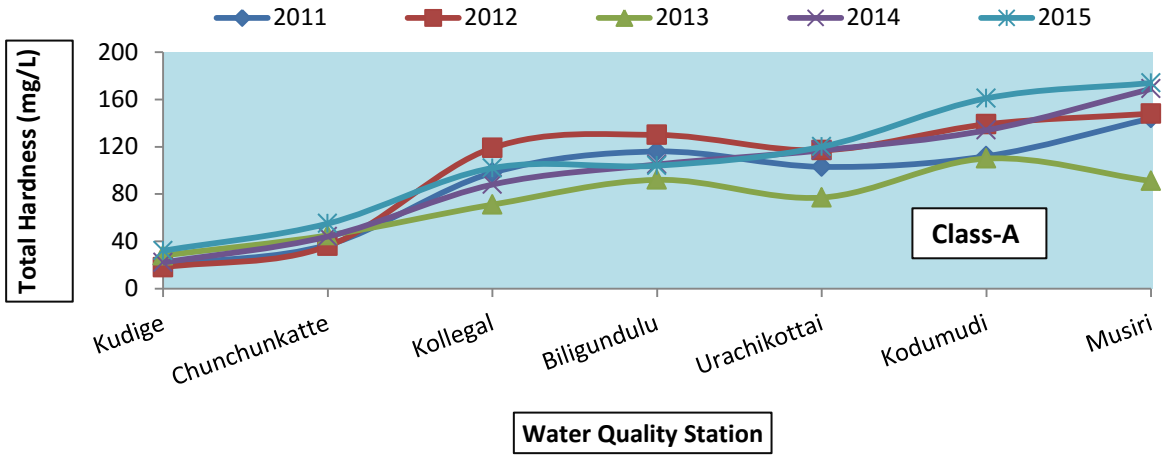


Fig 2.6.11 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for Total Hardness at CauveryBasin

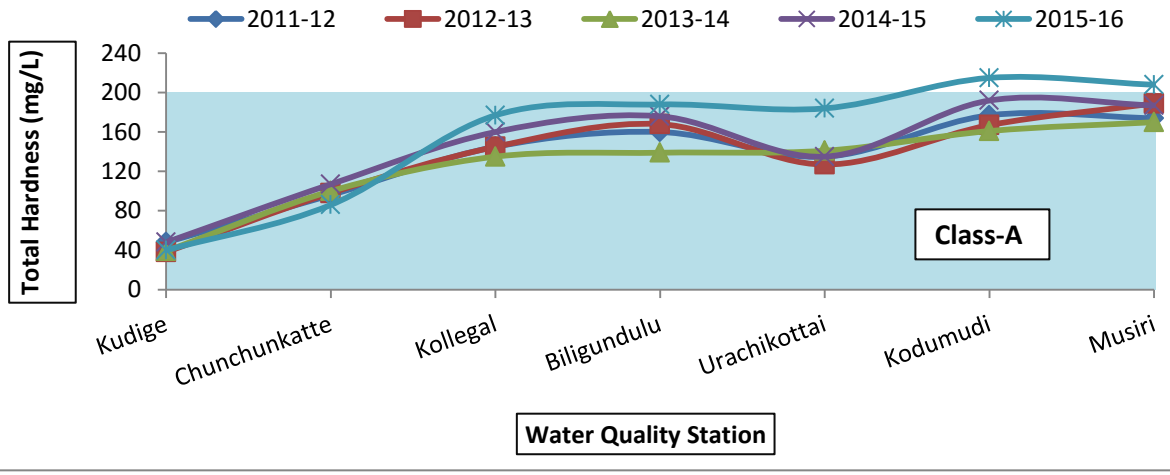


Fig 2.6.12 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for Total Hardness at CauveryBasin

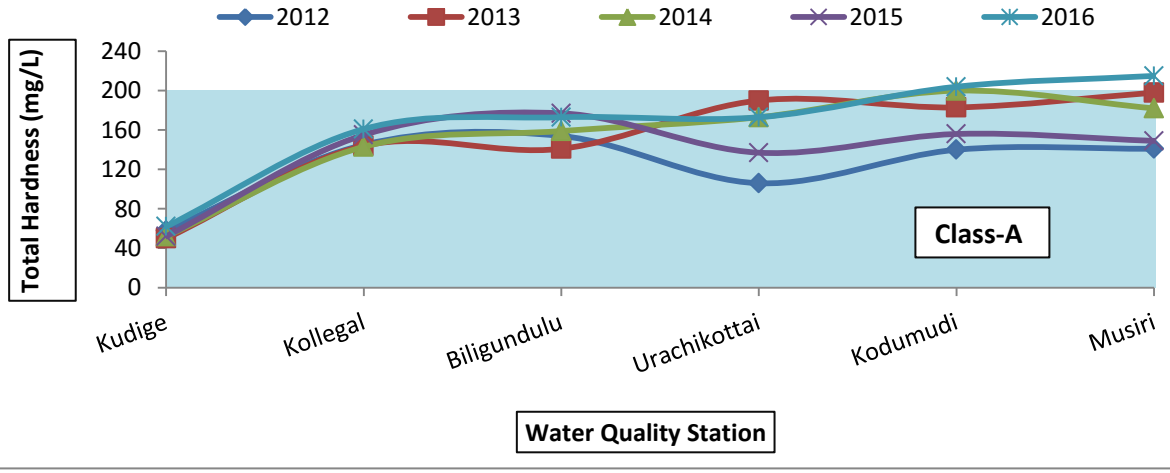
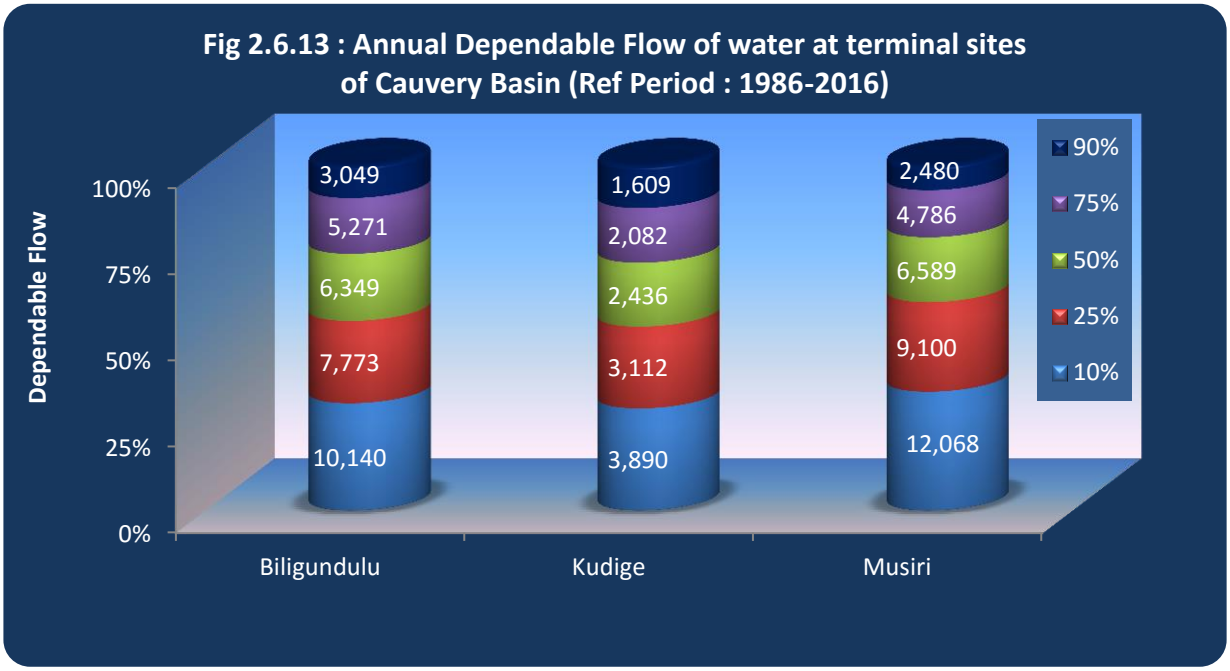


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Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	BILIGUNDULU	6/1986 to 5/2016	10139.86	7773.07	6348.68	5271.28	3048.91
2	KUDIGE		3890.11	3111.63	2436.26	2082.47	1609.06
3	MUSIRI		12068.15	9100.17	6588.53	4785.53	2479.96

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore



2.6.5 Land Use Statistics: Table 2.6.2 to Table 2.6.4 below present the land use pattern, gross irrigated area and net irrigated area for Cauvery basin as compared to all basins(Region-III).

TABLE 2.6.2: LAND UTILISATION PATTERN BY CAUVERY AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Cauvery	85,567.32	15,926.05	14,100.34	6,076.89	13,603.28	35,860.76	9,804.92	45,665.69
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte.. of Economics & Statistics, M/o. Agriculture

TABLE 2.6.3: GROSS AREA IRRIGATED BY SOURCES OF CAUVERY AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Cauvery	9,320.15	6.63	9,326.79	864.45	4,136.80	5,237.24	9,374.04	92.41	19,657.69
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

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TABLE 2.6.4: NET AREA IRRIGATED BY SOURCES OF CAUVERY AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Cauvery	7,504.90	4.74	7,509.65	777.85	3,584.60	4,520.70	8,105.29	226.07	16,618.87
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.6.6 Urban Centre: Important cities on the basin are Coimbatore, Bangalore & Tiruchirapally.

2.6.7 Industries: Some of the main industries in the basin are Paper mills, Sugar mills, Chemical Factories, and Cotton mills. Mining activity in the basin includes Stone mining for building construction works.

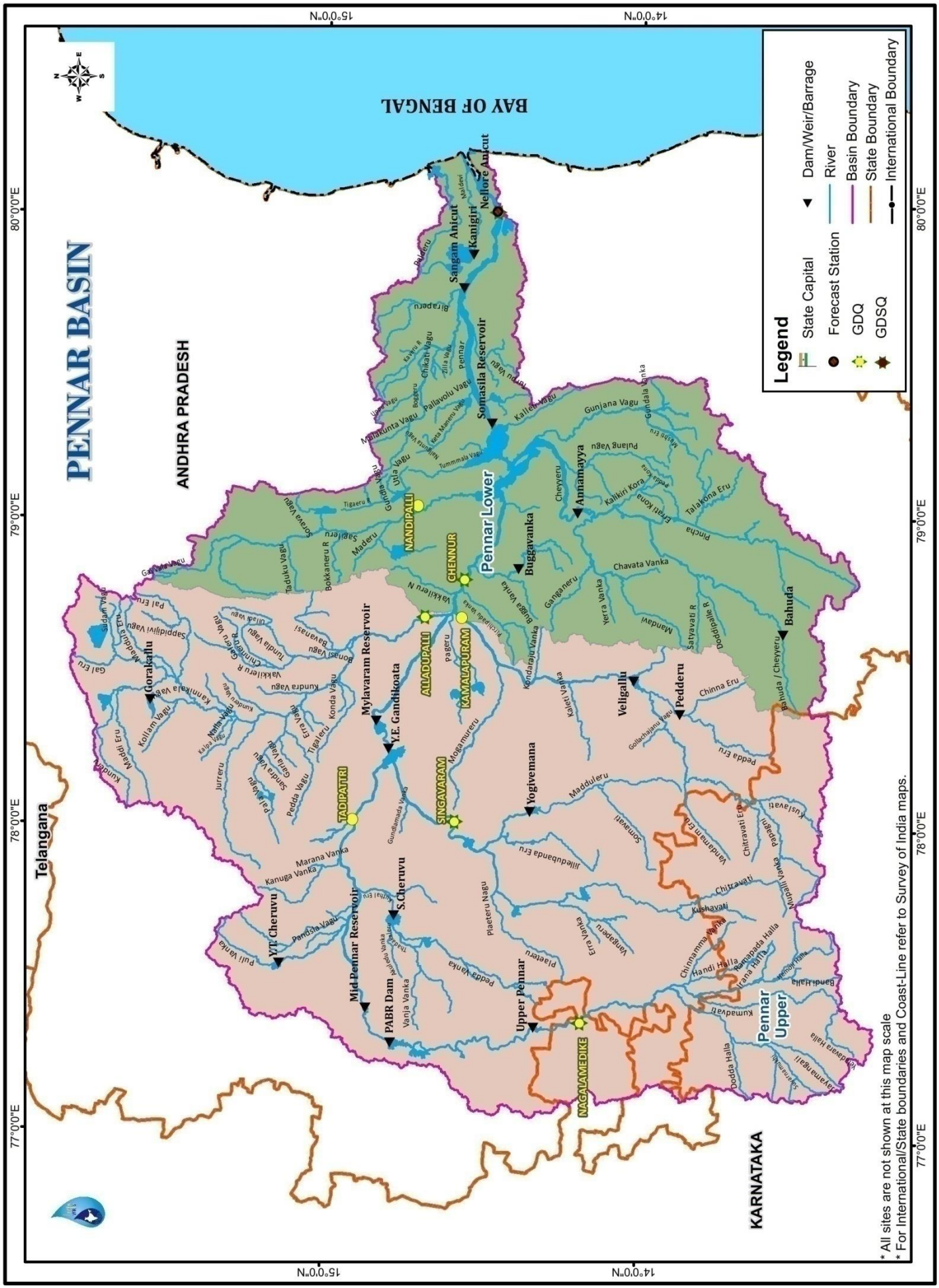
2.7 PENNAR BASIN

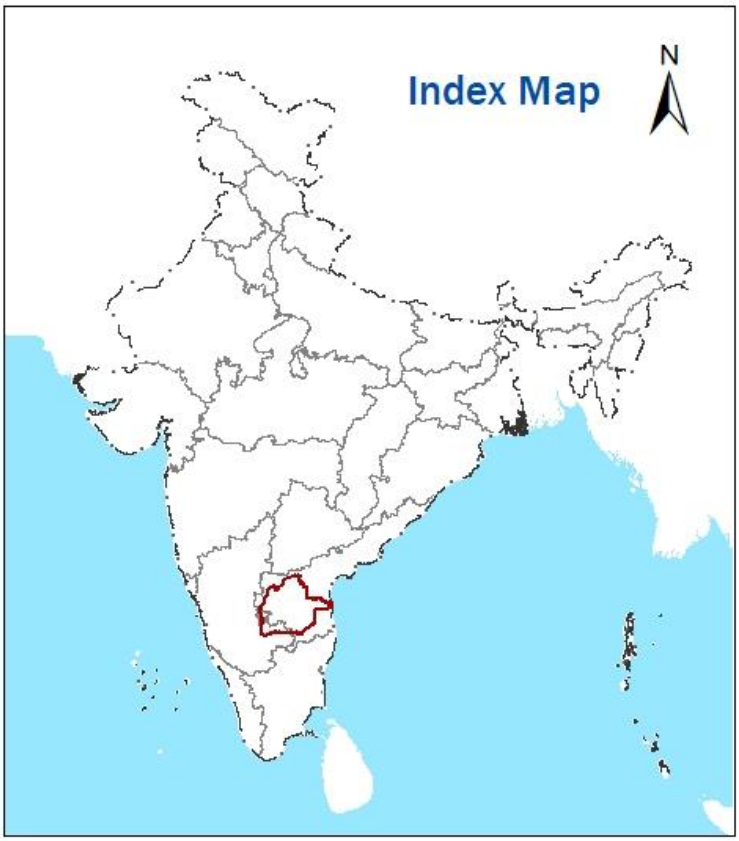
Location: The Pennar River is one of the major East Flowing Rivers in Southern India. It rises in the Chenanakesava hill of the Nandidurg range in Karnataka, flows in the north westerly direction through Kolar and Tumkur districts of Karnataka; it enters erstwhileAndhra Pradesh in the Hindupur taluk of Anantapur district, runs eastwards before draining into the Bay of Bengal near Nellore. The Basin lies between east longitude 77^0 $1^{'}$ to 80^0 $10^{'}$ and north latitude 13^0 $18^{'}$ to $15^0 49^{'}$. The fan shaped basin is bounded by the Erramala range on the North, by the Nallamala and Velikonda ranges of the Eastern Ghats on the East, by the Nandidurg hills on the South and by the narrow ridge separating it from the Vedavati valley of the Krishna Basin on the West. The other hill ranges in the basin to the South of the river are the Seshachalam and Paliconda ranges.

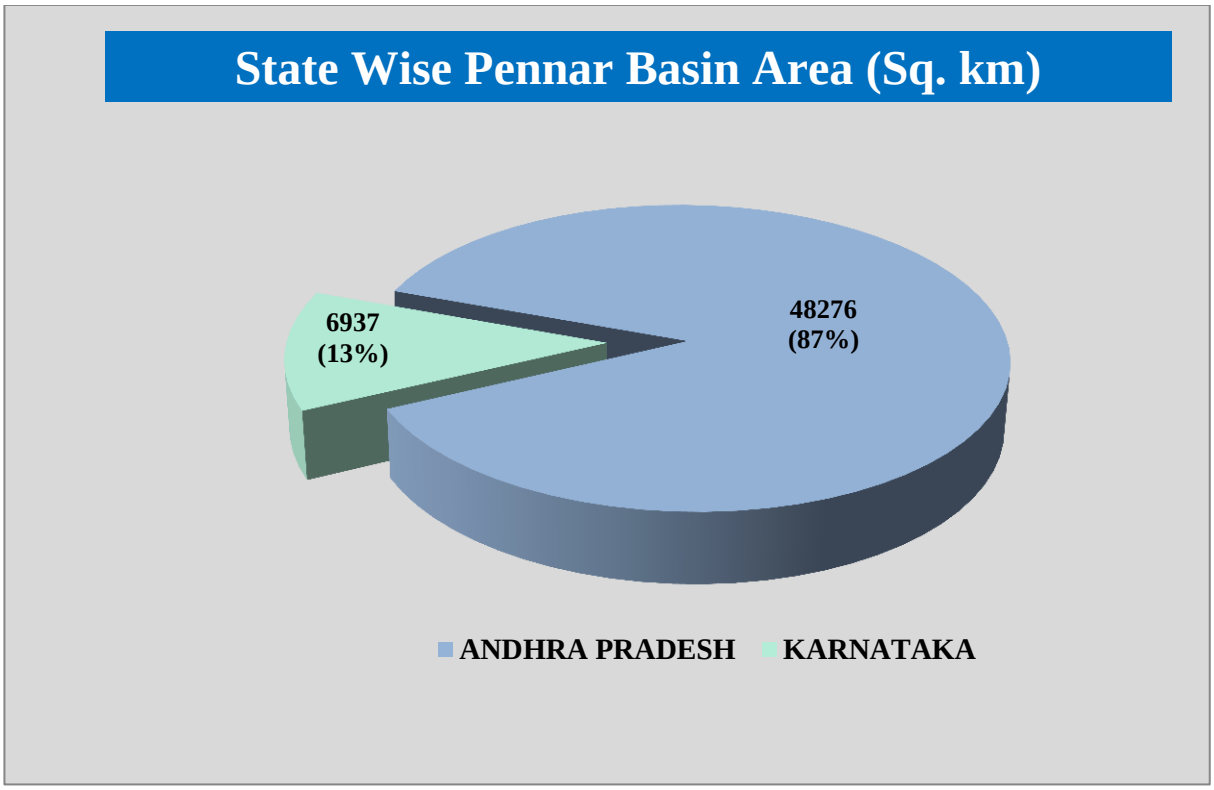
The total length of Pennar river is 597 Km of which 61 Km runs in Karnataka and the rest in Andhra Pradesh. This river has six major tributaries namely, the Jayamangali, the Kunderu and the Sagileru joining from the left, the Chitravathi, the Papagni and the Cheyyeru joining on the right.

2.7.1 Major Projects: Tungabhadra RB High level Canal stage - i& ii, Somasila, Pulivendula Branch Canal**,** Pennar Deltaare the major projects in the catchment area of the basin.

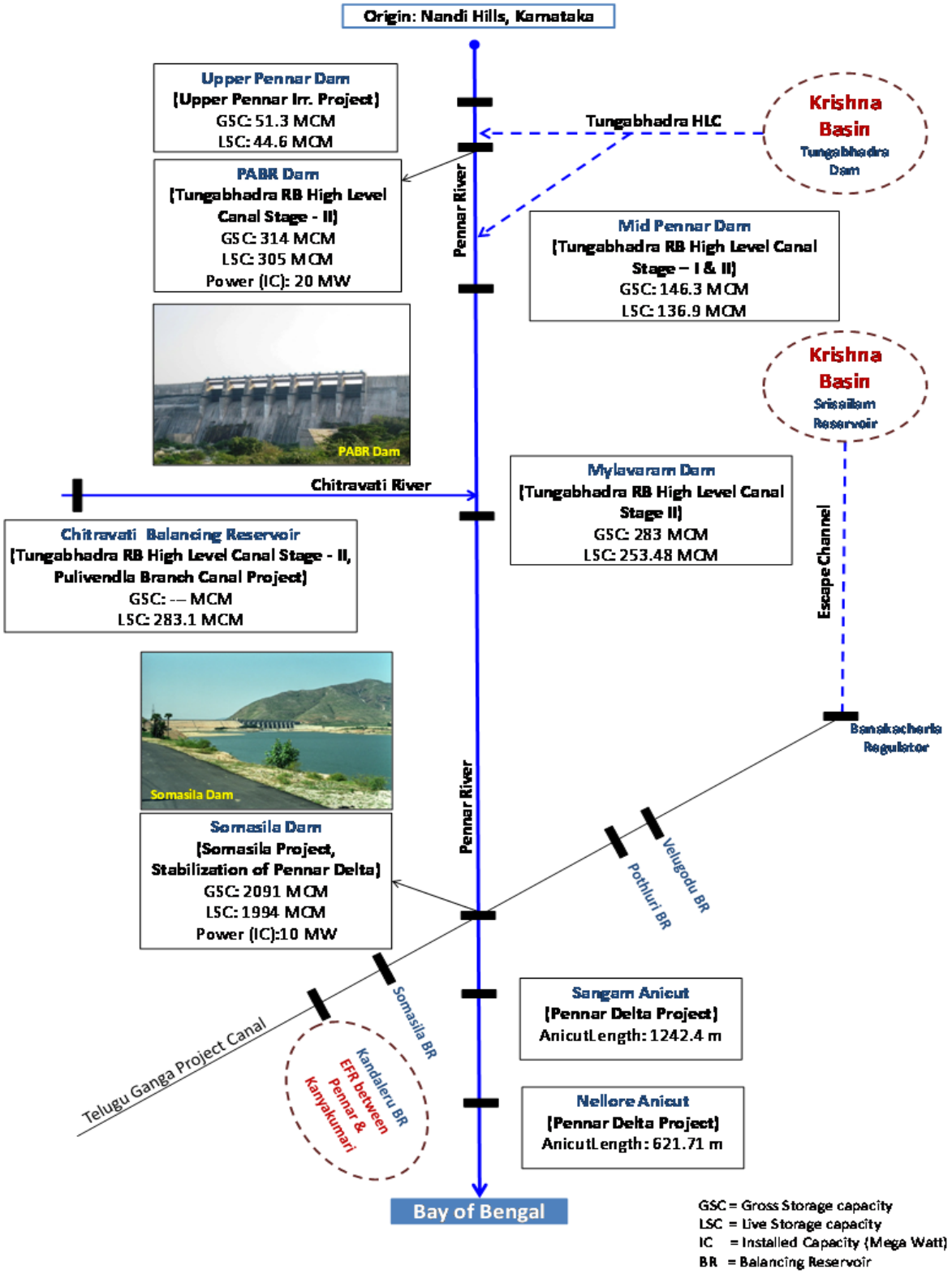
2.7.2 Hydrological Observation Stations: Central Water Commission is operating 8 Hydrological Observation sites on Main Pennar and its tributaries located at (i) Nellore (GDQ),(ii) Nandipalli (GDQ), (iii) Chennur (GDSQ), (iv) Alladupalli (GDSQ), (v) Kamalapuram (GDQ), (vi) Tadipatri(GDQ), (vii) Nagalamadike (GDQ) and (viii) Singavaram (GDQ).


PENNAR BASIN
BAY OF BENGAL
ANDHRA PRADESH
Telangana
KARNATAKA
Legend
State Capital
Forecast Station
GDQ
GDSQ
Dam/Weir/Barrage
River
Basin Boundary
State Boundary
International Boundary
Sangam Anicut
Kanigiri
Nellore Anicut
Somasila Reservoir
Pennar Lower
Pennar Upper
NANDIPALLI
CHENNUR
ALLADUPALLI
KAMALAPURAM
TADIPATRI
SINGAVARAM
NAGALAMEDIKE
Mylavaram Reservoir
Y.E. Gandikoata
Mid Pennar Reservoir
PABR Dam
S.Cheruvu
YT. Cheruvu
Upper Pennar
Annamayya
Buggavanka
Bahuda
Bahuda / Cheyveru
Veligallu
Pedderu
Yogivemana
Gorakallu
Penna
Chitravati
Kushavati
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.


Index Map
N

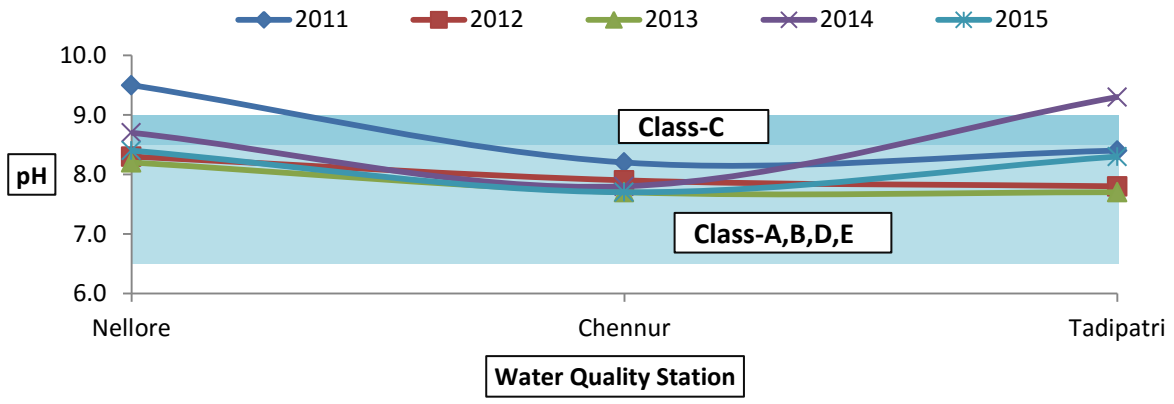

State Wise Pennar Basin Area (Sq. km)
6937
(13%)
48276
(87%)
ANDHRA PRADESH
KARNATAKA

Pennar River Flow Line Diagram



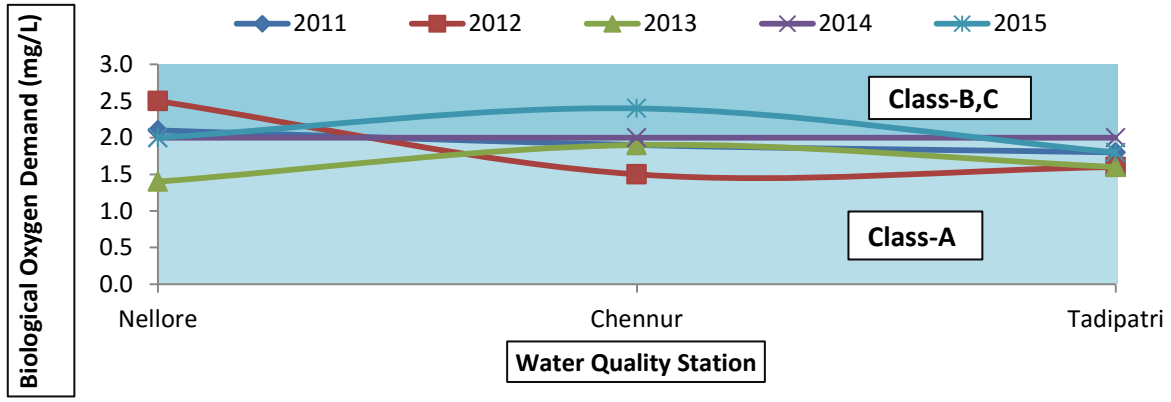
Basin: Pennar (Water Quality Parameter: pH)

Fig 2.7.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Pennar Basin



Basin: Pennar (Water Quality Parameter: BOD)

Fig 2.7.2 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Pennar Basin



Basin: Pennar (Water Quality Parameter: Total Hardness)

Fig 2.7.3 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at Pennar Basin

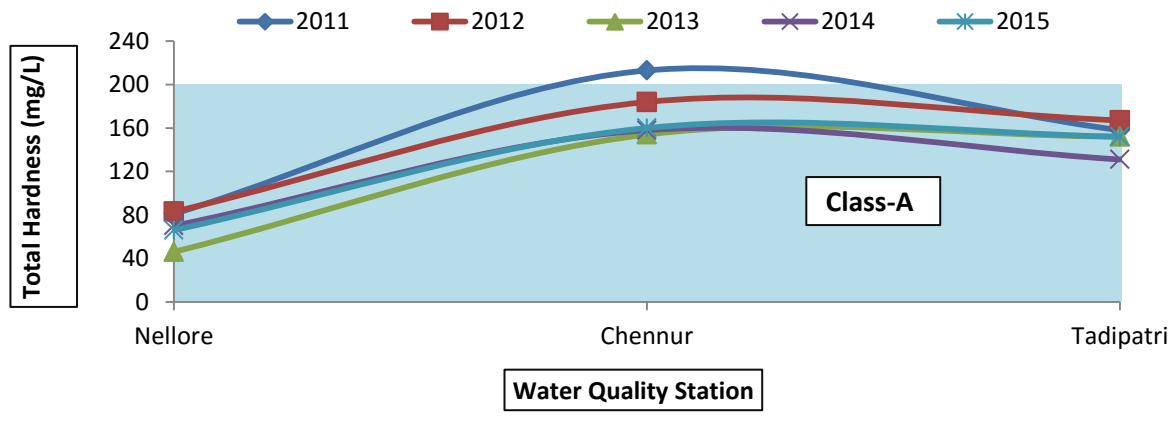
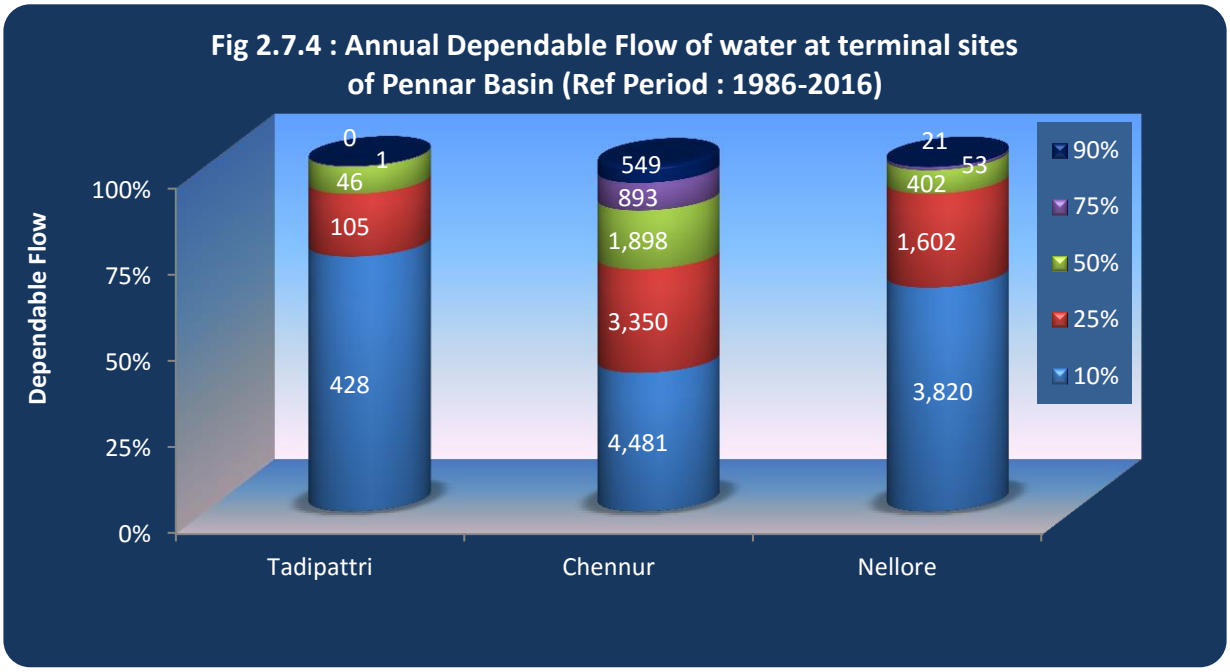


Table 2.7.1: Annual Dependable Flow Of Water at Terminal Sites Of Pennar Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	TADIPATTRI	6/1986 to 5/2015	427.90	105.48	45.51	1.49	0.00
2	CHENNUR	7/1989 to 5/2016	4481.33	3350.24	1898.34	893.17	549.42
3	NELLORE	8/1987 to 5/2016	3820.42	1602.10	402.22	52.60	21.20

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore



2.7.3 Land Use Statistics: Table 2.7.2 to Table 2.7.4 present the land use pattern, gross irrigated area and net irrigated area for Pennar basin as compared to all basins(Region-III).

TABLE 2.7.2: LAND UTILISATION PATTERN OF PENNAR AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Pennar	53,564.05	6,913.22	9,680.47	4,514.97	9,569.51	22,885.89	2,199.04	25,084.93
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.7.3: GROSS AREA IRRIGATED BY SOURCES OF PENNAR AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Pennar	859.16	-	859.16	570.86	4,927.41	204.11	5,131.52	128.69	6,690.23
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.7.4: NET AREA IRRIGATED BY SOURCES OF PENNAR AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Pennar	791.34	-	791.34	549.96	4,034.35	178.38	4,212.73	117.94	5,671.98
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.8 EAST FLOWING RIVERS BETWEEN MAHANADI AND PENNAR BASIN

Location: The basin spreads over states of Andhra Pradesh and Odisha having an area of 86,643 Sq. km and stretches between 78° 40' to 85° 1' east longitudes and 14° 34' to 20° 22' north latitudes. It is bounded by the Eastern Ghats on the north and west, by Nallamala Range and Andra plains on the south and by the Bay of Bengal on the east.

This composite basin comprises of three river systems. The river systems between Mahanadi and Godavari covers an area of 49,685 Sq. km and the river systems between Krishna and Pennar extends over an area of 24,669 Sq. km. In addition, there is also a small area between Godavari and Krishna drained mainly by the small stream of Palleru. This minor portion of the basin has an area of about 12,289 Sq. km. The independent rivers (directly draining into Bay of Bengal) in the basin from north to south are the Rushikulya, Bahuda, Vamsadhara, Nagavati, Sarada, Varaha, Tandava, Eluru, Gundlakamma, Tammileru, Musi, Paleru and Manneru etc.

The major part of basin is covered with agricultural land accounting to 59.85% of the total area and 3.66% of the basin is covered by water bodies. The basin spreads over 19 districts (2011) comprising 11 of Andhra Pradesh and 8 of Odisha state.Brief descriptions of the major independent rivers are given below.

2.8.1 Rushikulya : The Rushikulya River is one of the east flowing rivers in Odisha. It covers entire catchment area in the districts of Kandhamal and Ganjam. The river flows through Purushottampur, Pratappur and joins with the Bay of Bengal at Ganjam district. The river Rushikulya originates at an elevation of about 1000 metre near Matabarhi village of Kandhmal district of Odisha State and lies within the geographical co-ordinates of 19^0 07' to 20^0 19' north latitude and 84^0 01' to 85^0 06' east longitude. The total catchment area is 7700 sq km. The Barhanadi, Ghodapada, Baghua and Pathama are the main principal tributaries.

2.8.2 Vamsadhara: The Vamsadhara River is an important east flowing river between Mahanadi and Godavari. The river originates near Lanjigarh village in Kalahanadi district in Odisha and traverses a total distance of about 221 km before it joins the Bay of Bengal at Kalingapatnam in erstwhile Andhra Pradesh. It has five principal tributaries viz. Chauldua, Phalphalia, Ganguda (Harbhangi), Sanna Nadhi and Mathendrathanaya. Most of its catchment area falls on the left. The basin is narrow and full of undulations. It is situated within the geographical co-ordinates of 18^0 15' to 19^0 55' north latitudes and 83^0 20' to 84^0 20' east longitudes. The total catchment area of this basin works out to 10,830 Sq km.

2.8.3 Sarada: The Sarada River, an east flowing medium sized river, lies in the district of Visakhapatnam of erstwhile Andhra Pradesh. The geographical co-ordinates of the river are north latitude 17^0 25' to 18^0 17' and east longitude 82^0 32' to 83^0 06'. The basin is surrounded by Nagavali in the north, Gostari, Gambi Ramgedda, Megadnigedda in the east, Bay of Bengal in the south and Machhkund sub-basin of the Godavari in the west. The catchment area of the basin is 2665 sq km. It rises at an elevation of 1000 metre near Longuparu village and traverses a distance of 104 km before joining the sea.The average rainfall is 1000 mm.

2.8.4 Nagavali: The Nagavali river isa medium sized east flowing river in peninsular India and lies within the geographical co-ordinates of north latitude $18^0$10' to $19^0$44' and east longitudes of $82^0$53' and $84^0$05'. It is surrounded by Vamsadhara in the north, Champavathi and Peddagedda in the south, Godavari in the west and the Bay of Bengal in the East. It drains parts of the districts of Kalahandi, Rayagada, Koraput of Odisha and Srikakulam,

Vijayanagaram and Visakhapatanam of erstwhile Andhra Pradesh state. The total catchment area is 9510 sq km with an averge rainfall of 1000 mm.The Nagavali River originates near the Lakhbahal in Kalahandi district (Odisha) at an elevation of about 1300m. The total length of the river run is 217 km. The important tributaries are Nagavali, Janjhvati, Suvarnamukhi, and Vegavathi.

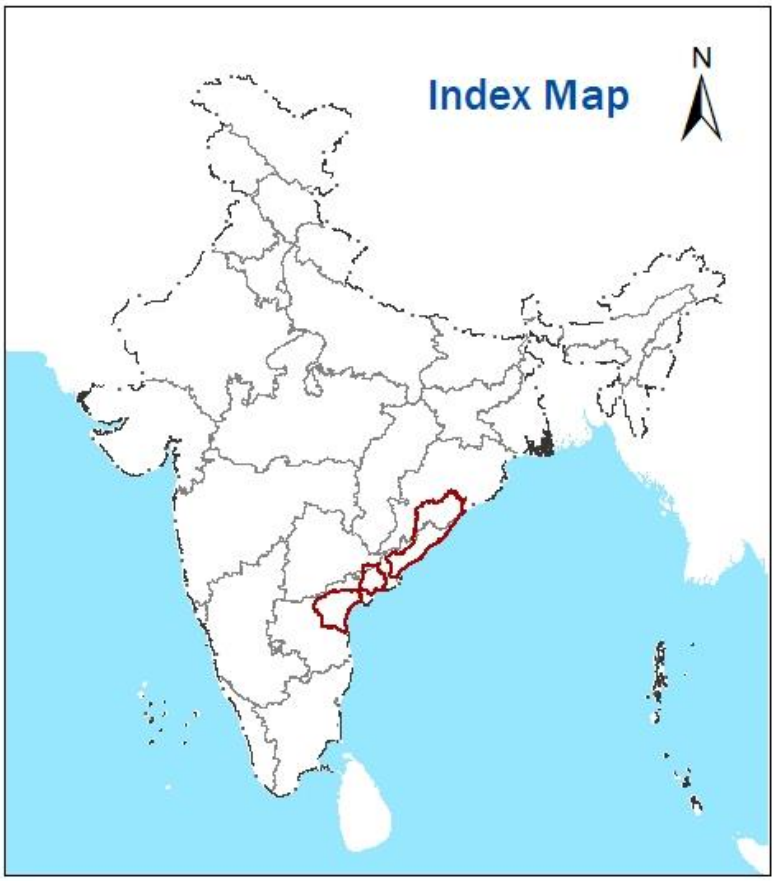
2.8.5 Gundlakama: The Gundlakama river rises near Iskagundam village in Kurnool district at an elevation of 600 metre from the eastern slopes of the Nallamala hills at north latitude 15^0 $38^{'}$ and east longitude 78^0 $47^{'}$ and flows in a north-east,east and southern direction for a total length of 220 km to join the Bay of Bengal. The total area drained by this river is 8,494 sq km and total catchment area for the river is 7681 sq. km. The Kandleru is its important left bank tributary.There is one H.O. site for each for Gauge, Discharge, Sediment and Water Quality.

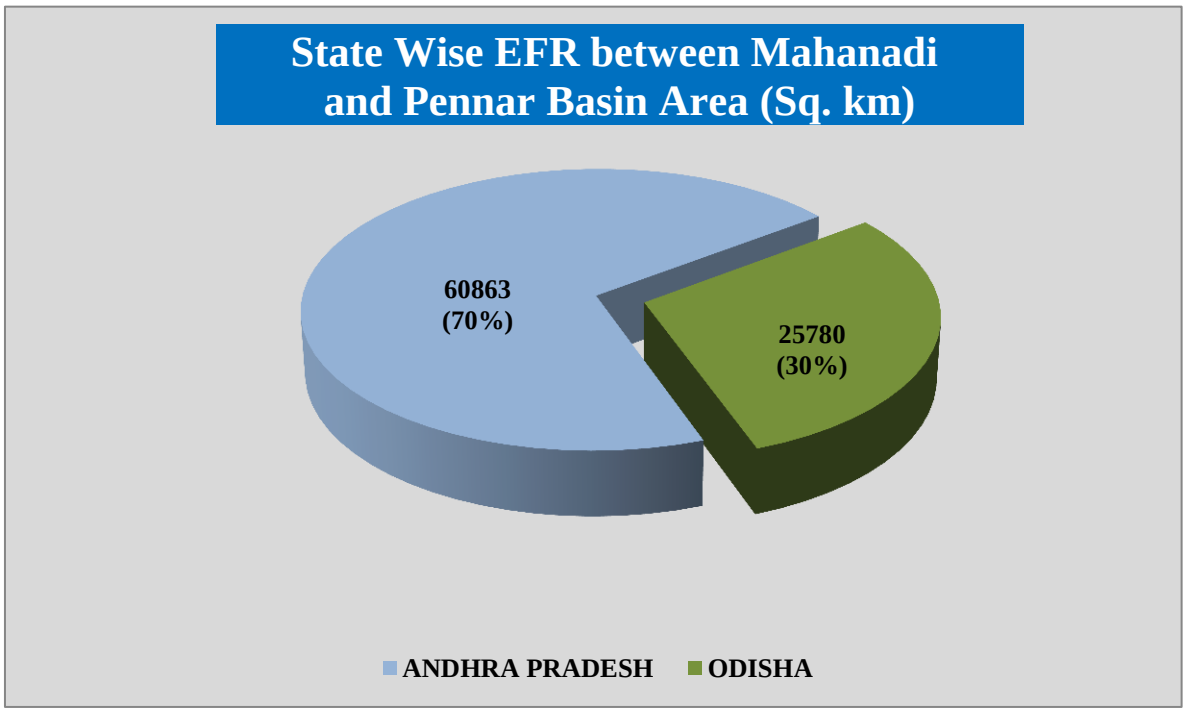
2.8.6 Paleru: The Paleru river rises from near Gogulapalle Village in Nellore District of Andhra Pradesh at an elevation of 325 metre and flows for a total length of 104 Km. The catchment area of the river is 2,483 Sq. Km which lies entirely in Andhra Pradesh. The river basin lies at north latitude$15^0$$17^{'}$ and east longitude $79^0$$13^{'}$.Paleru Bitragunta Irrigation Project is a medium project which benefitted the Prakasam district.

2.8.7 Irrigation Projects: The Rushikulya Irrigation System is the only Major Irrigation Project in the catchment area of the Rushikulya River Basins.The Gotta barrage project in Vamsdhara basin, the Thotapally, Narayan Puram and Jaiyavathi are the major irrigationprojects in the catchment areas of the Nagavali river basin.

2.8.8 Hydrological Observation (H.O.)Sites: There are 15 H.O. sites in the basin, of which 7 sites are of Gauge only, 3 sites for Gauge & Discharge (GD) and 5 sites are of GDSQ type (as per 2015-16 data).


EAST FLOWING RIVERS BETWEEN MAHANADI AND PENNAR
Nagpur
RAIPUR
MAHARASHTRA
ORISSA
CHHATTISGARH
HYDERABAD
Telangana
ANDHRA PRADESH
BAY OF BENGAL
Madhabarida
Sorada
Kutraguda
Purushottampur
Mohana
Gudari
Ghodahado
Vamsadhara and other
Mahendragarh
Gunupur
Kashinagar
Thotapally Barrage
Gotta Barrage
(Vamasdhara Stage-I)
Nagvati and other
Srikakulam
Rajavada
Anakapally
Tandava
Sarada and other
Yeleru
Yerakal
Thammileru
Upputeru
Kolleru Lake
Gundlakamma
Marella
Sri Ramathirtham
Palleru
Legend
State Capital
Forecast Station
G
GD
GDSQ
Dam/ Weir/ Barrage
CE / CO / DO
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.


Index Map
N


State Wise EFR between Mahanadi and Pennar Basin Area (Sq. km)
60863
(70%)
25780
(30%)
ANDHRA PRADESH
ODISHA

EFR between Mahanadi and Pennar Flow Line Diagram

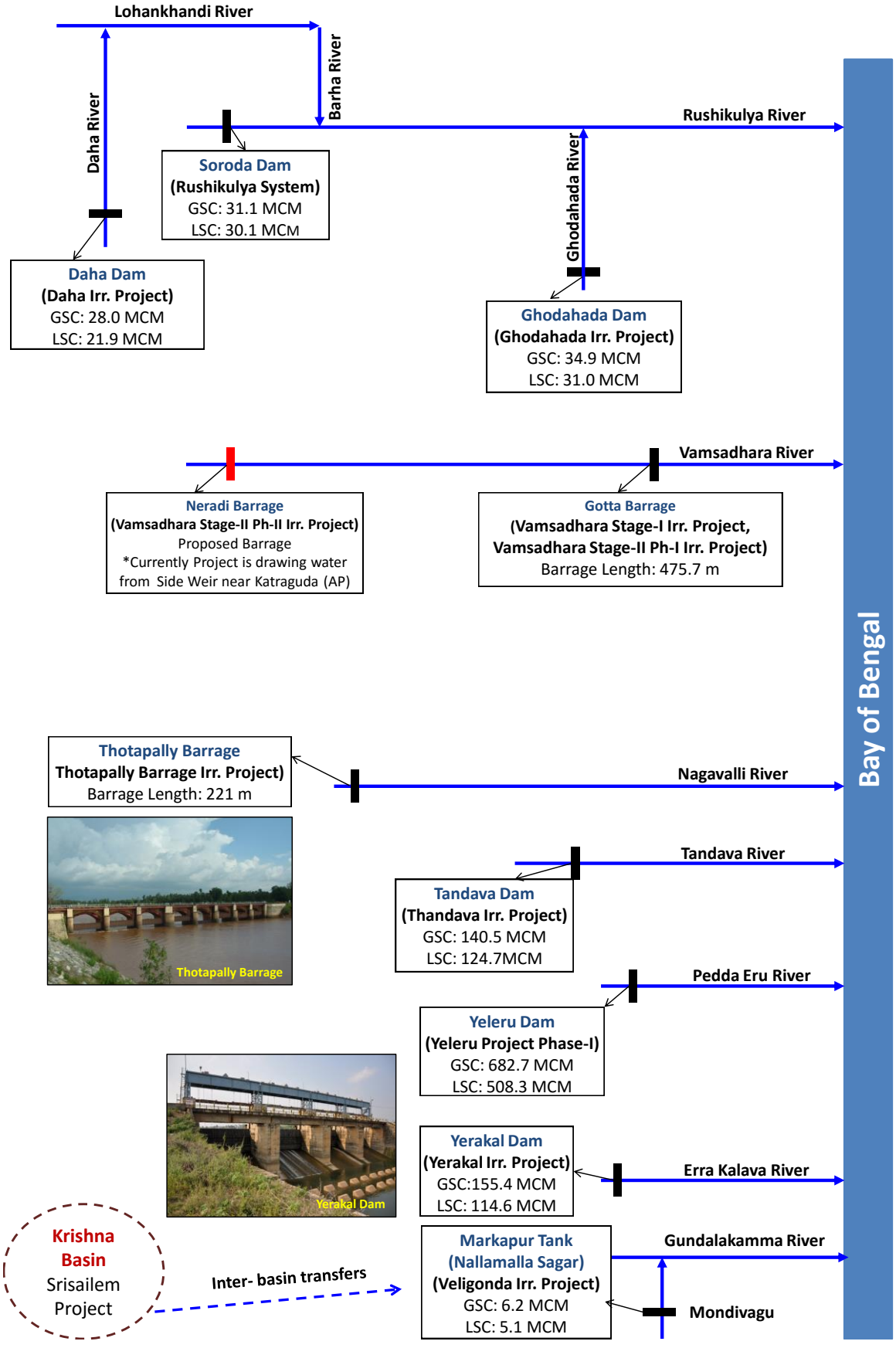
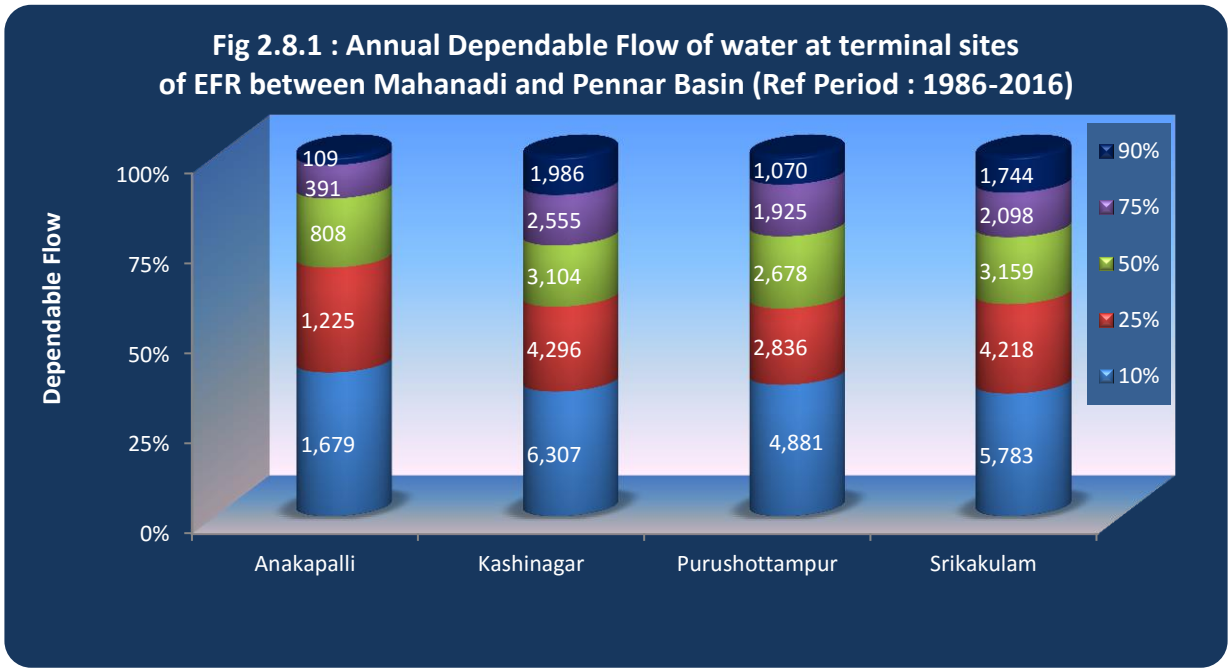


Table 2.8.1: Annual Dependable Flow of Water at Terminal Sites of EFR between Mahanadi and Pennar Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ANAKAPALLI	08/1990 to 05/2016	1679.47	1225.21	807.87	391.16	109.07
2	KASHINAGAR	06/1986 to 05/2016	6307.46	4295.73	3104.34	2554.57	1985.89
3	PURUSHOTTAMPUR	06/1989 to 05/2016	4880.81	2836.03	2677.89	1925.33	1070.19
4	SRIKAKULAM	08/1990 to 05/2016	5783.13	4218.35	3158.52	2097.66	1743.76

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore



2.8.9 Land Use Statistics: Table 2.8.2 to Table 2.8.4 present the land use pattern, gross irrigated area and net irrigated area of the basin as compared to all basins(Region-III).

TABLE 2.8.2: LAND UTILISATION PATTERN OF EFR FROM MAHANADI TO PENNAR AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
EFR from Mahanadi to Pennar	77,158.66	16,597.25	18,590.52	4,245.86	8,928.01	28,797.02	7,630.63	36,427.65
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.8.3: GROSS AREA IRRIGATED BY SOURCES OF EFR FROM MAHANADI TO PENNAR AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
EFR from Mahanadi to Pennar	8,695.60	996.24	9,691.83	2,577.27	6,138.86	489.34	6,628.19	615.70	19,513.00
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.8.4: NET AREA IRRIGATED BY SOURCES OF EFR FROM MAHANADI TO PENNAR AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
EFR from Mahanadi to Pennar	5,736.62	-	5,736.62	2,115.58	4,172.98	279.63	4,452.61	2,925.41	15,230.22
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.8.9 Urban Centres: Behrampur city, Ganjam and Sorada are situated in the basin.Srikakulam, Gunupur,Visakhapatnam and Vijayanagaram are other important towns in the basin.

2.8.10 Industries: Major industries in the basin are chemical, sugar, Spinning Mills and Steel plants.

2.8.11 Minerals: The basin is rich in mineral wealth. The major economic minerals are clay, lime stone, manganese, graphite,mica, bauxite, aluminium, fire clay, quartz, sand talc, black sand and grinding materials.

2.9 EAST FLOWING RIVERS FROM PENNAR TO KANYAKUMARI BASIN

Location: The basin extends over states of Tamil Nadu, Andhra Pradesh, Karnataka and Union Territory of Puducherry having a total area of 1,02,287.9 sq. km *(GIS Calculated as per India-WRIS Database)* and accounts for nearly 3.08% of the total geographical area of the country. The basin extends between 77°1' to 80°17' east longitudes and 8°11' to 14°27' north latitudes. It is bounded by the Eastern Ghats on the north, by Tamil Nadu uplands on the west, by the Indian Ocean on the south and by the Bay of Bengal on the east.

The composite basin comprises of the river systems between Pennar and Cauvery having an area of 63,646.2 Sq.km and the river systems between Cauvery and Kanyakumari with an area of 38,646.1 Sq.km. The independent rivers (directly draining into Bay of Bengal) are the Kandleru, the Swarnamukhi, the Arani, the Korttalaiyar, the Cooum, the Adyar, the Palar, the Gingee, the Ponnaiyar, the Vellar, the Varshalei, the Vaigai, the Gundar, the Vaippar and the Tambraparni. The basin is comprised of four sub-basins; Vaippar and others Sub-basin, the Palar and other sub-basin, Pamba and others sub-basin and Ponnaiyar and other sub-basin. The salient features for the basin are described in Table 2 (2.9).

The major part of basin is covered with agricultural land accounting to 66.65% of the total area, forest area comprising of 15% of the basin area and 9.02% of the basin is covered by waterbodies. The utilizable surface water is around 16.50 BCM whereas average annual water potential is 16.46 BCM. The total number of watersheds in this basin is 165. On the basis of the 2001 Census, the total population in this basin is about 3,55,50,515. The basin spreads over forty-nine parliamentary constituencies (2009) comprising of thirty-two in Tamil Nadu, six of Karnataka, five of Andhra Pradesh, five of Kerala and one of Puducherry.

Brief descriptions of the rivers flowing in the basin are given below.

2.9.1 Swarnamukhi: The Swarnamukhi is an East Flowing river basin having a small catchment Area of 3,225 sq km. It rises at an elevation of 300 metre in the Eastern Ghat ranges near Pakada village in Chittur district of erstwhile Andhra Pradesh at North latitude 13^0 28' and east longitude 79^0 09'. It runs generally in north eastern direction passing through the famous Tirupati hills before joining into the Bay of Bengal. This Independent river has no major tributaries and therefore its flow depends only on rainfall in its upper catchment.There is one H.O. site for each for Gauge, Discharge, Sediment and Water Quality.

2.9.2 Kalingi: The Kalingi River is one of the East flowing rivers in erstwhile Andhra Pradesh. It originates near Kalahasti in erstwhile Andhra Pradesh and drains completely in erstwhile Andhra Pradesh and joins in Pulicat lake after Sulurpet. The catchment area of Kalingi River is 5,927 sq km and the length is 76 km. The important tributary is Kalleru river which joins Kalingi River after Sulurpet town. There is one H.O. site for each for Gauge, Discharge, Sediment and Water Quality.

2.9.3 Palar: The Palar basin is an important basin among the 12 basins lying between the Pennar and the Cauvery basin. This basin is divided into three major topographical divisions namely, (i) the hill ranges of Eastern Ghats (ii) the plateau region and (iii) the coastal plains. Though most of the drainage area lies in Tamil Nadu, its drainage area extends to cover the southeast and southwest parts of Karnataka and erstwhile Andhra Pradesh respectively. The shape of the basin is rhombus. The basin finds its outlet into Bay of Bengal. The Palar drains an area of 17,871 sq km out of which nearly 57 percent lies in Tamil Nadu and the balance in

the states of Karnataka and erstwhile Andhra Pradesh.Each of Gauge, Discharge and Water Quality type of H.O. sites are having 3 sites.

2.9.4 Ponniar: The Ponniar basin is the second largest inter-state East Flowing river basin among the 12 basins lying between the Pennar and the Cauvery basins. It covers a large area in the state of Tamil Nadu, besides the areas covered in the states of Karnataka and erstwhile Andhra Pradesh. It lies between the east longitudes 77^0 $33^{'}$ to 79^0 $47^{'}$ and north latitudes 11^0 $45^{'}$ to 13^0 $30^{'.}$ This basin is bounded in the northwest and south by various ranges of the Eastern Ghats like the Velikonda range, the Nagari hills, the Javadu hills, the Shevaroy hills, the Chitteri hills and the Kalrayan hills and in the east by the Bay of Bengal. The Ponnaiyar drains an area of 16,019 Sq km out of which nearly 77 percent lies in Tamil Nadu. The Ponniaror the Dakshina Pinakini river rises near Hongashenhalli village at an elevation of about 900m above msl in the Kolar district of Karnataka state. From its origin, the river Ponniargenerally flows in the southern direction through Kolar and Bangalore districts of Karnataka to a length of 79 km before entering the Dharmapuri district of Tamil Nadu. The river flows another 247 km generally in the south east direction in the districts of Dharmapuri, Vellore, Tiruvannamalai, Cuddalore and Villupuram districts. Then, the river flows in the eastern direction below the Tirukoyilur anicut for another 70 km before finding its way into the Bay of Bengal. The river Ponniarbranches into two, the Gadilam near Cuddalore and the Ponnaiyarnear the Union Territory of Puducherry. On its way, the river Ponnaiyarreceives a number of small streams and rivulets. Krishnagiri and Sathanur Reservoir are the major projects in the catchment areas of the river basin.There are 3 H.O. sites out of which 3 are Gauge, 3 are discharge, 3 for Water Quality and 2 for Sedimentation.

2.9.5 Vellar: The Vellar River rises at an elevation of 900 metre near the village of Tumba in the Chottori hills, of the Eastern Ghats in the Salem district of Tamil Nadu. It flows generally in an easterly direction for a total length of 210 Km through Salem and Cuddalore districts in Tamil Nadu and finally out falls into the Bay of Bengal near Porto Nova in Cuddalore district. It drains a total catchment area of about 8,922 sq km. The Gomukinadhi and Manimukthanadi are the important left bank tributaries and Swetanadhi and Chinnar are the right bank tributaries of the Vellar.There is one H.O. site each for Gauge, Discharge and Water Quality.

2.9.6 Vaigai: The Vaigai basin is an important basin among the 12 basins lying between the Cauvery and Kanyakumari. The basin is bounded by the Varushanadu hills, the Andipatti hills, the Cardaman hills and the Palani hills on the west and the Palk Strait and Palk Bay on the east. This basin is divided into two major topographical divisions namely (i) the hilly areas and (ii) the plains. The basin is elongated in shape and drains into the Palk Bay. The Vaigai drains an area of 7,741 sq km which entirely lies in the state of Tamil Nadu.

The Vaigai river rises on the eastern slopes of the Varushanadu hills at an elevation on 1,200m above msl near Kottamalai in the Madurai district at a north latitude 9^0 $32^{'}$ and east longitude 77^0 $23^{'}$ and flows in the northernly and north easternly directions up to its confluence with the Varahanadi and then takes a turn towards east and south east to flow through Madurai, Sivagangai and Ramanathapuram districts. On its way, the Vaigai receives two important tributaries namely the Suruliyar and the Manjalar on its left bank, besides a large number of small streams and rivulets. The river has been dammed downstream of its confluence with the Suruliyar tributary.

The Suruliyar and the Manjalar, the two important left bank tributaries together account for nearly 20 percent of the total catchment area of the Vaigai. The Suruliyar is the principal tributary of the Vaigai also rises in the eastern slopes of the Varushanadu hills and flows in the north and north eastern direction. It receives Theniar on its left bank just before its confluence

with the Vaigai. The Manjalar another major tributary rises in the Palani hills and flows generally in the easterly direction before joining the Vaigai below the Vaigai dam. The Vaigai also receives another minor tributary namely the Varahanadi on its left bank below the Vaigai dam. The Vaigai Reservoirisa major project in the catchment area of the basin. There are H. O. sites with 3 for each of Gauge, Discharge, Sedimentation and Water Quality.

2.9.7 Vaippar: The Vaippar River rises on the eastern slopes of the Varushanadu hill ranges of the Western Ghats near Sivagiri in Thirunelveli district in Tamilnadu at an elevation of about 900m. It flows generally in an easterly direction for a length of about 125 km through Thirunelveli, Virudhunagar and Tuticorin districts in Tamilnadu and joins the Gulf of Mannar near Kalattur. The river basin is located on south of Vaigai. It drains a total catchment area of 5,069 sq km. The catchment area lies entirely in Tamilnadu. The Arjunanadhi and Vijayanadhi are the important tributaries on the left bank.There is one H.O. site for each of Gauge, Discharge and Water Quality.

2.9.8 Tambraparani: The Tambraparani river rises on the eastern slopes of the Western Ghats at an elevation of about 1,400m at north latitude 8^0 46' and east longitude 77^0 15' near Alwarkurichi village in Thirunelveli district of Tamilnadu to flow in a generally easterly direction for a total length of 130 km and joins the Gulf of Mannar. The Chittar and Manimuthar are the left & right bank tributaries of this river. The total area drained by the Tambraparani is 5,482 sq km. There is one H.O. site for each of Gauge, Discharge, Sedimentation and Water Quality.

2.9.9 Varahanadi: The main river Varahanadi originates from the Northern part of Pakkammalai hills at an elevation of 5660 metre above m.s.l, in the western slopes past of Gingee Taluk.The total area of the basin is 2564 Sq. Kms. The total length of Varahanadi up to its outfall into Bay of Bengal, a little South of Puducherry state, is about 78.50 kms. There is one H.O. site on this stream at Kumarapalayam being operated by Central Water Commission.There is one H.O. site for each of Gauge, Discharge and Water Quality.

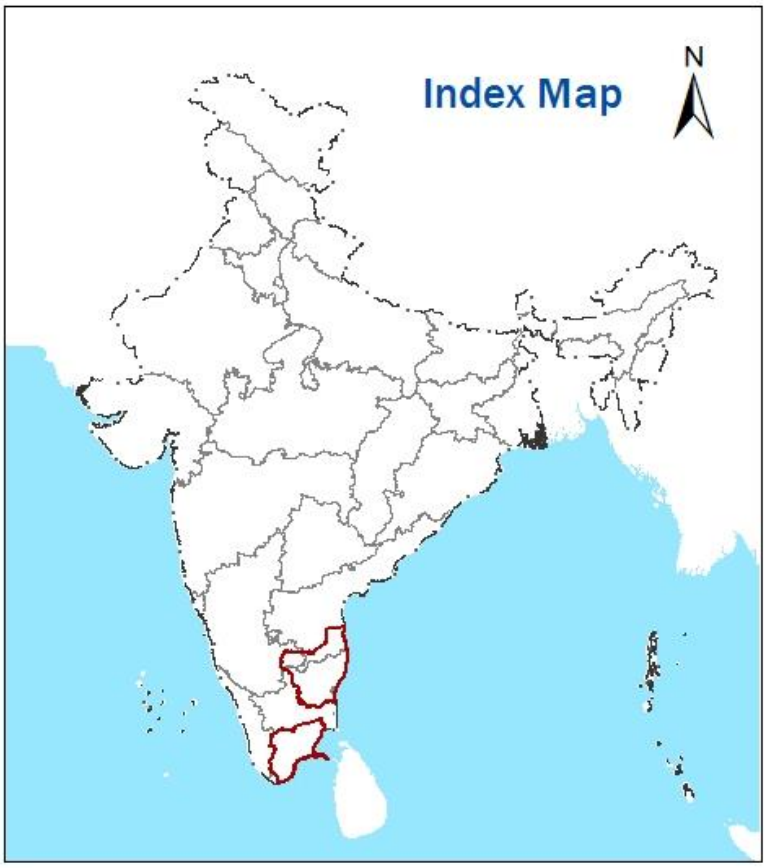
2.9.10Irrigation Projects: The Somashila in the sub-basin of Pennar, Krishnagiri and Sathanur in the sub-basin of Ponniar, Vaigai reservoir in the sub-basin of Vaigai are the major projects in the catchment areas of the west flowing river basin.

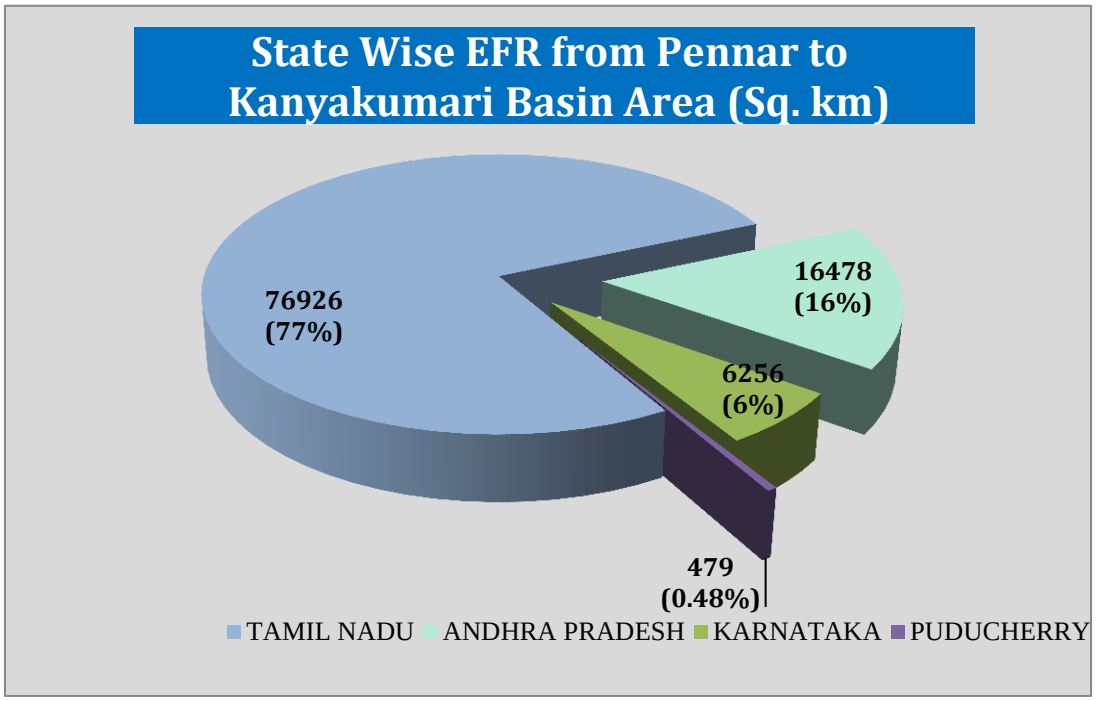
2.9.11 Hydrological Observation Sites: There are 17 sites in the basin for recording observations on water quality, gauge and discharge. Sediment observations are made at 5 of these stations (as per 2015-16 data). (Ref Table 3)

2.9.12 Peak Water Level: Most of the sites have not registered significant peak water level in the basin. Only four sites have registered 200 metre or above peak water level out of 17 reported sites during the reference period 2015-16. The maximum peak water level was observed at Gummanur site (495.60 metre) on 24.10.2005, which is highly significant as compared to observations made at other reporting sites.

2.9.13 Water Quality: Temporal trends of water quality parameters viz. pH,BOD,Total hardness are given below for three sites of the basin(Fig 2.9.1 to Fig 2.9.9).


EAST FLOWING RIVER BASIN
PENNAR TO KANYAKUMARI
ANDHRA PRADESH
KARNATAKA
TAMIL NADU
KERALA
PUDUCHERRY
BAY OF BENGAL
SRI LANKA
BANGLORE
COIMBATORE
TRIVANDRUM
CHENNAI
Kandaleru /Kandaleru Dam
Uppuleru
Naidupet
Swarnamukhi
Kalangi
Sulurpet
Arniar Dam
Nagari
Kortalaiyar
Poondi Dam
Nandi
Palar and other
Arcot
Palar
Aayar
Kelavarapalli Dam
Ponnaiyar
Avarankuppam
Padavettar
Cheyar
Magaral
Chengalpet
Kaliyar
Gummanur
Krishnagiri Dam
Varaganadi
Angur
Ponnaiyar and other
Kumarapalayam
Vazhavachanur
Kallar
Villupuram
Gomukhinadi Dam
Manimukthanadhi Dam
Sweta
Willington Dam
Kudalaiyathur
Agniar
Ambulla
Vellar
Manjalar Dam
Vaigai Dam
Theni
Pamba and others
Panibet
Suruliyar
Ambasamudram
Vaigai
Manalar Dam
Paramakudi
ARJUNA
Gundar
Gridhamal
Vembakottai Dam
Irrukkankudi
Vaippar and others
A.p.puram
Servalar Dam
Murappanadu
Manimuthar Dam
Nambiyar
Pazhayar
Legend
State Capital
Forecast Station
GD
GDQ
GDSQ
Dam/Weir/Barrage
Divisional Office
Circle Office
CE/CO/DO
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
77°0'0"E
78°0'0"E
79°0'0"E
80°0'0"E
81°0'0"E
14°0'0"N
13°0'0"N
12°0'0"N
11°0'0"N
10°0'0"N
9°0'0"N


Index Map
N


State Wise EFR from Pennar to Kanyakumari Basin Area (Sq. km)
76926
(77%)
16478
(16%)
6256
(6%)
479
(0.48%)
TAMIL NADU
ANDHRA PRADESH
KARNATAKA
PUDUCHERRY

EFR from Pennar to Kanyakumari Flow Line Diagram

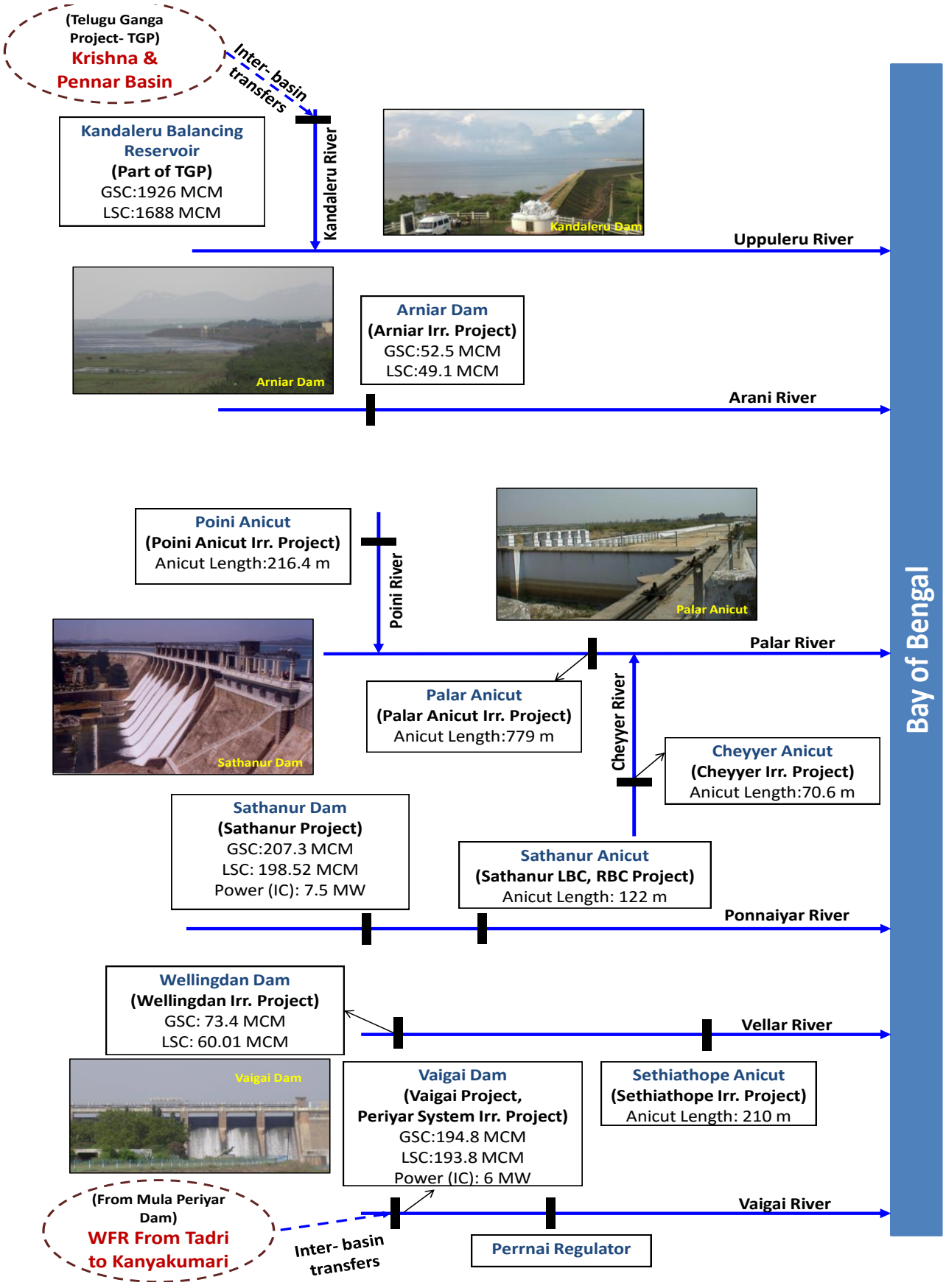
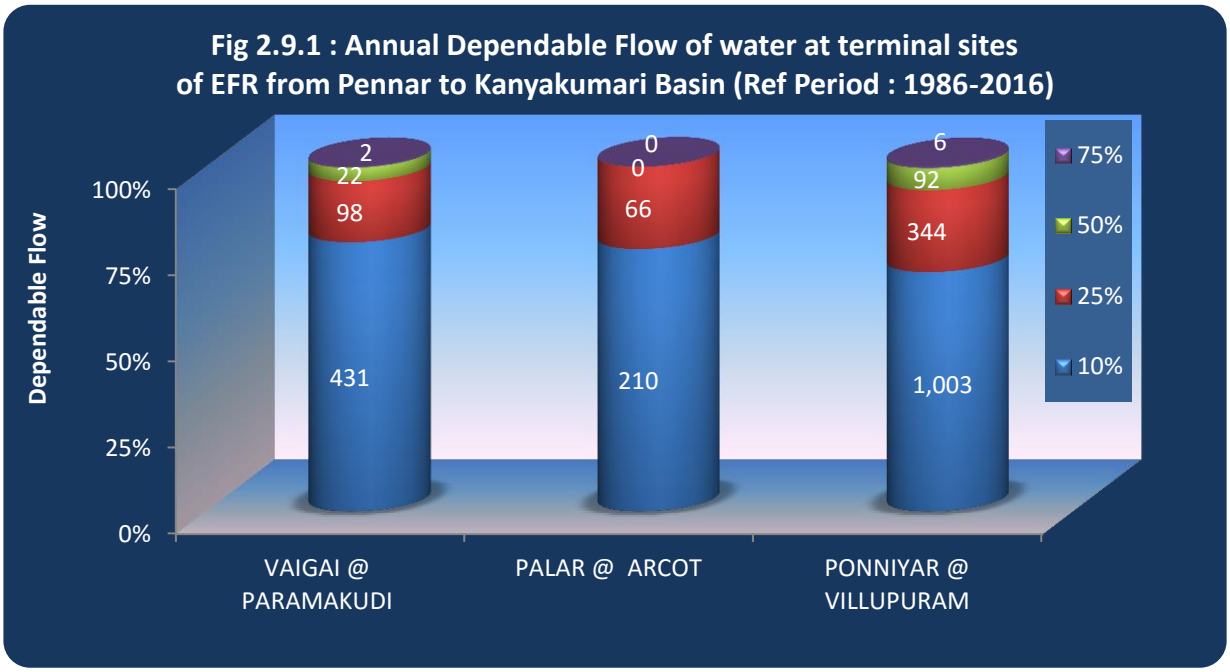


Table 2.9.1: Annual Dependable Flow Of Water at Terminal Sites Of EFR from Pennar to Kanyakumari Basin

Sl. No.	River @ Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	VAIGAI @PARAMAKUDI	6/1986 to 5/2016	431.19	97.82	21.76	1.53	0.00
2	PALAR @ ARCOT		209.59	65.62	0.08	0.00	0.00
3	PONNIYAR @ VILLUPURAM		1002.73	343.87	92.23	5.78	0.00

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore



2.9.14 Land Use Statistics: Table 2.9.2 to Table 2.9.4 present the land use pattern, gross irrigated area and net irrigated area for the basin as compared to all basins(Region-III).

TABLE 2.9.1: LAND UTILISATION PATTERN OF EFR BETWEEN PENNAR & KANYAKUMARI AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
efr between pennar and kanyakumari	97,045.17	16,162.73	22,614.16	5,574.79	19,884.30	32,809.19	7,268.16	40,077.35
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.9.2: GROSS AREA IRRIGATED BY SOURCES OF EFR BETWEEN PENNAR & KANYAKUMARI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
efr between pennar and kanyakumari	2,600.49	3.01	2,603.50	5,108.49	6,419.18	10,088.93	16,508.12	41.25	24,261.36
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.9.3: NET AREA IRRIGATED BY SOURCES OF EFR BETWEEN PENNAR & KANYAKUMARI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
efr between pennar and kanyakumari	2,021.06	0.90	2,021.96	4,584.01	4,840.30	7,505.81	12,346.12	36.41	18,988.50
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.9.15 Minerals: Important minerals found in the basin are Lime Stone, Sand Stone, Quartzite and Dolomite.

2.10 NARMADA BASIN

Location: The Narmada is the largest west flowing and fifth largest river of India. It drains an area of 98,796 sq km out of which nearly 87% lies in Madhya Pradesh besides some areas in the states of Maharashtra and Gujarat. The Narmada basin lies between east longitudes 72^0 32' to 81^0 45' and north latitudes $21^0$20' to $23^0$45'. It flows through Deccan trap in between Vindhya and Satpura ranges of hills before flowing into the Gulf of Cambay in the Arabian Sea.

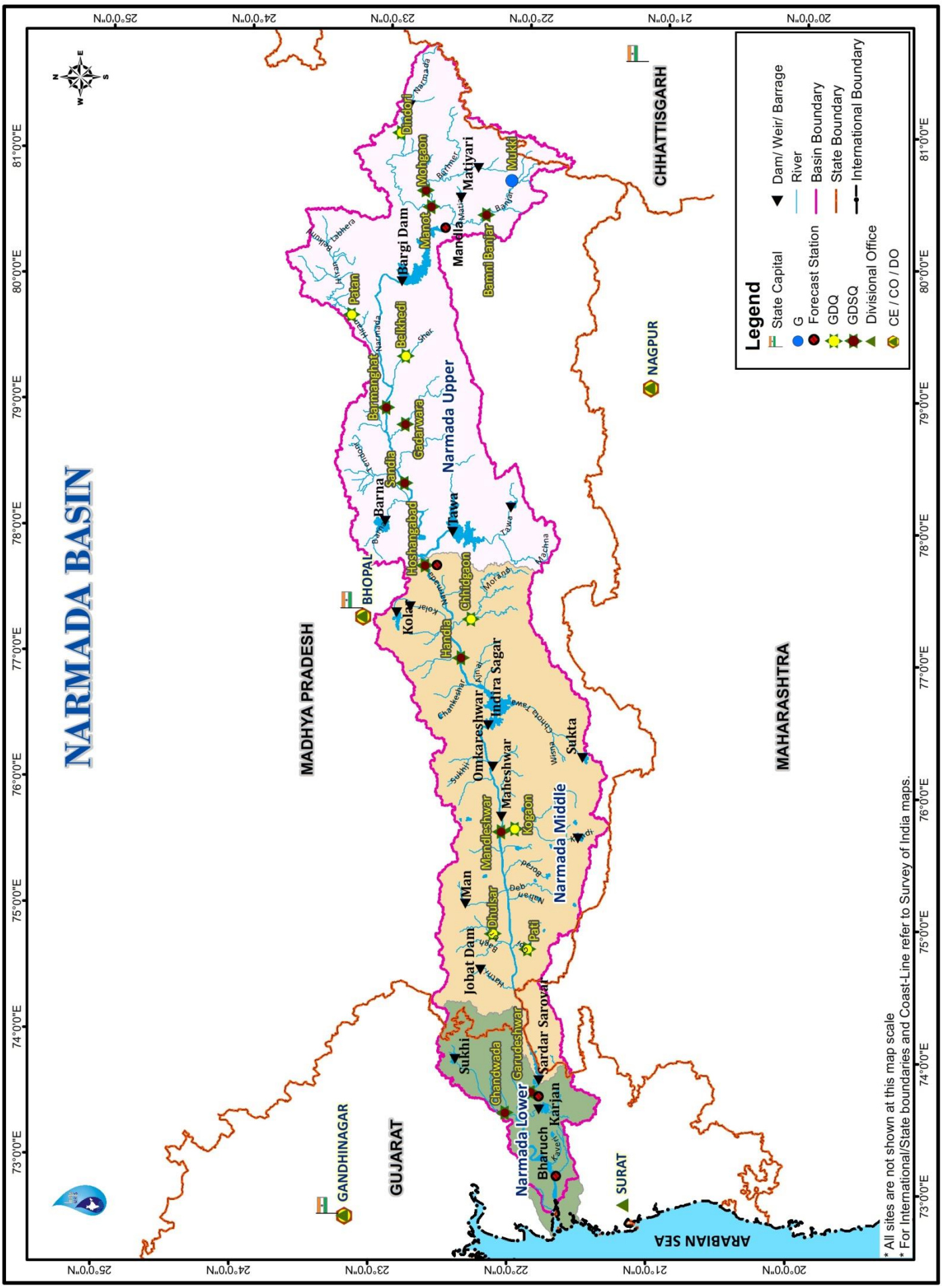
The Narmada originates from a Kund (spring) at an elevation of 1057m at Amarkantak in the Maikal hill in Shahdol district of Madhya Pradesh and flows through Madhya Pradesh, Maharashtra and Gujarat between Vindhya and Satpura hill ranges before falling into the Gulf of Cambay in the Arabian Sea, about 10 km north of Bharuch district of Gujarat. The total length of this west flowing river from its origin to its outfall into the Sea is 1,312 km. For the first 1,079 km, it runs in Madhya Pradesh and thereafter it forms the common boundary between Madhya Pradesh and Maharashtra for 35 km, and Maharashtra and Gujarat for 39 km. In Gujarat State, it stretches for 159 km. There are 41 important tributaries to the Narmada River. Significant among them are Burhner, Banjar, Hiran, Tawa, Chhota Tawa, Orsang and Kundi which are major tributaries having catchment area of more than 3,500 sq km. The remaining tributaries are having catchment areas ranging from 500 to 2,500 sq km. Temprature of Narmada basin is like any other part of Central India. In general, the upper Narmada basin records lower temperature as compared to middle basin.

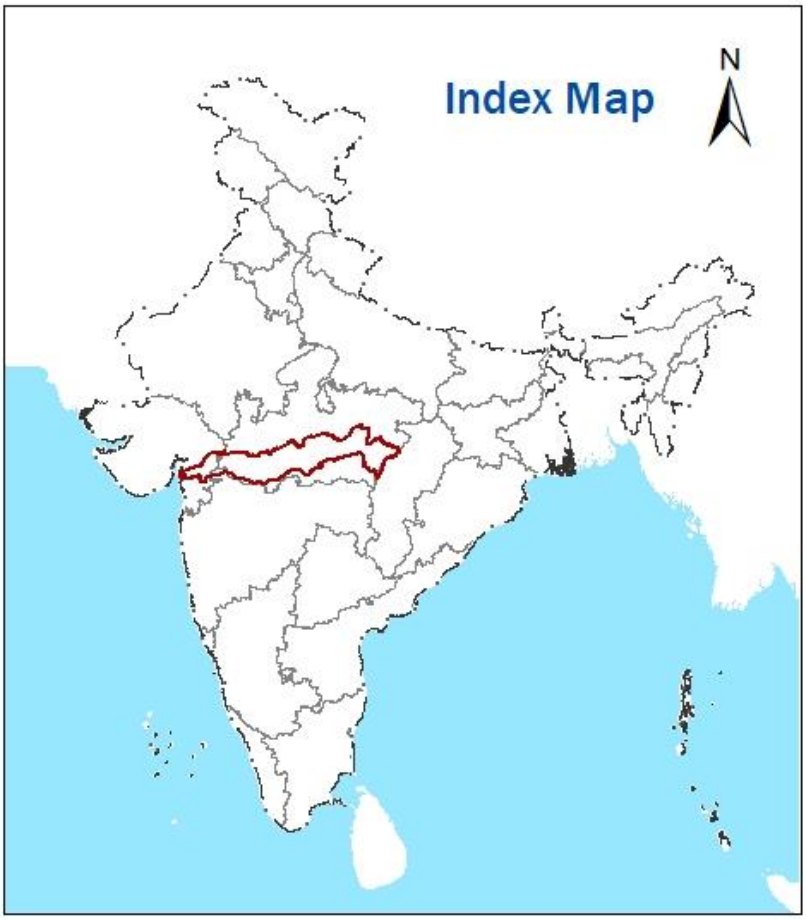
2.10.1Irrigation Projects: Karjan,Sardar Sarover, Jobat, Man, Upper Beda, Maheshwar, Indira Sagar, Sukta, Kolar, Tawa, Barna, Bargi, Matiyari are the major projects in the catchment areas of the river basin.

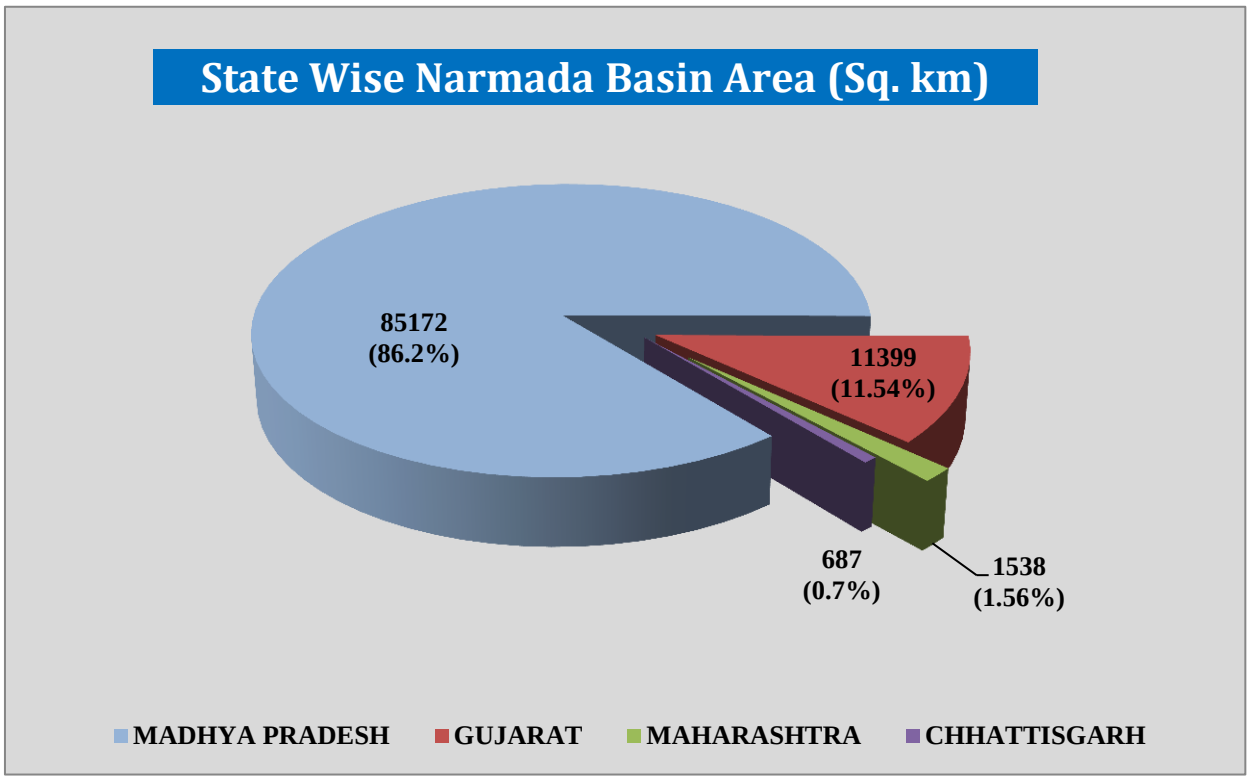
2.10.2Hydrological Observation (H.O.)Sites: There are in total 19 H.O sites in the basin out of which 18 are being operated currently for recording observations on Water Quality, Gauge and Discharge. Sediment observations are being measured at 11 of these stations (as per 2015-16 data).

2.10.3 Peak Water Level: This basin contains 19 sites and has interesting fact that Dindori site which is situated at highest latitude and longitude registered the highest peak water level of the order of 669.64 metre on 23.08.1991 during the reference period 2015-16.

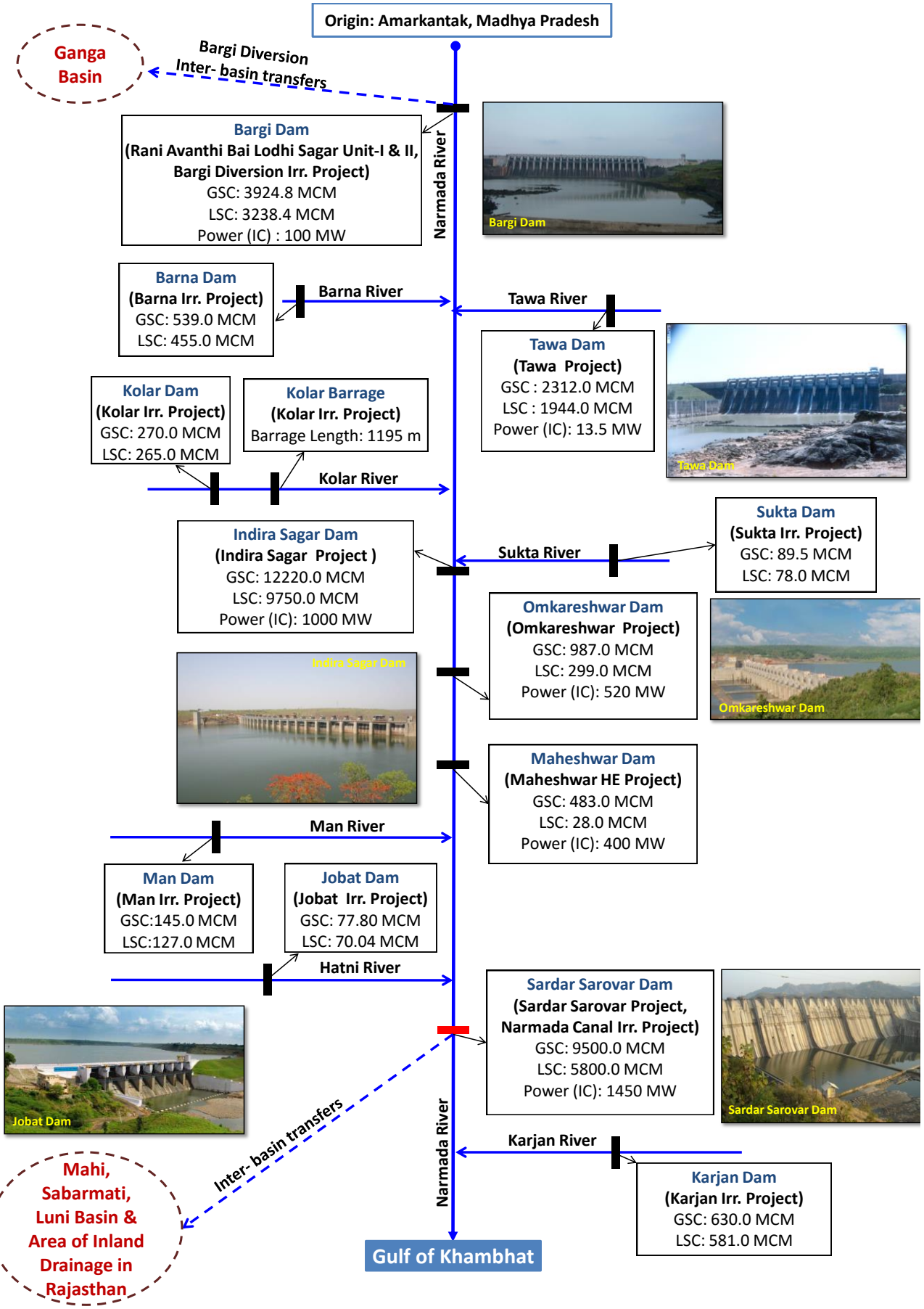
2.10.4Water Quality: Temporal trends of water quality parameters viz. pH,BOD,DO, Total hardness are given below for four sites of Narmada basin (Fig 2.10.1 to Fig 2.10.12).


NARMADA BASIN
MADHYA PRADESH
GUJARAT
MAHARASHTRA
CHHATTISGARH
BHOPAL
GANDHINAGAR
NAGPUR
SURAT
ARABIAN SEA
Narmada Upper
Narmada Middle
Narmada Lower
Bargi Dam
Tawa
Indira Sagar
Omkareshwar
Maheshwar
Jobat Dam
Sardar Sarovar
Legend
State Capital
Dam/ Weir/ Barrage
River
Forecast Station
Basin Boundary
State Boundary
International Boundary
GDQ
GDSQ
Divisional Office
CE / CO / DO
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.


Index Map
N


State Wise Narmada Basin Area (Sq. km)
85172
(86.2%)
11399
(11.54%)
687
(0.7%)
1538
(1.56%)
MADHYA PRADESH
GUJARAT
MAHARASHTRA
CHHATTISGARH

Narmada River Flow Line Diagram



Basin: Narmada (Water Quality Parameter: pH)

Fig 2.10.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Narmada Basin

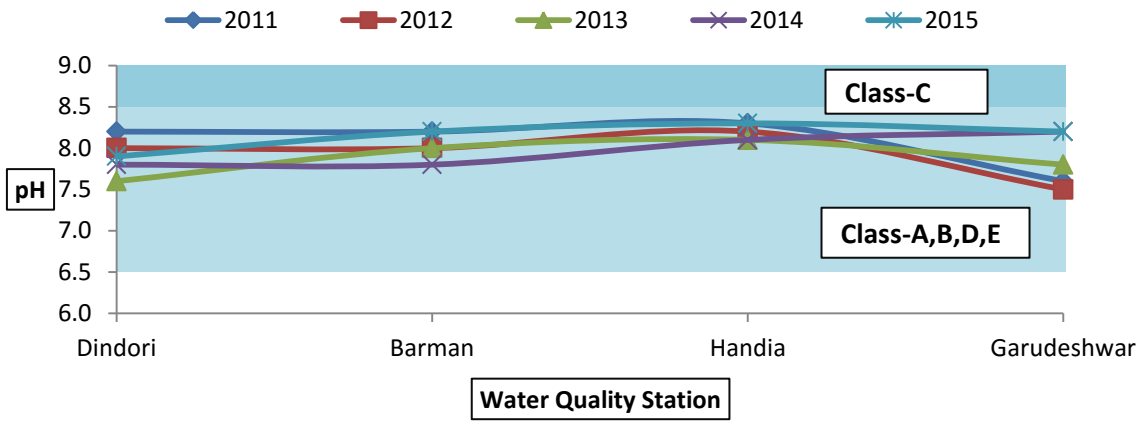


Fig 2.10.2 : Seasonal 5 years trend (2011 to 2015) during Winter (Nov-Feb) for pH at Narmada Basin

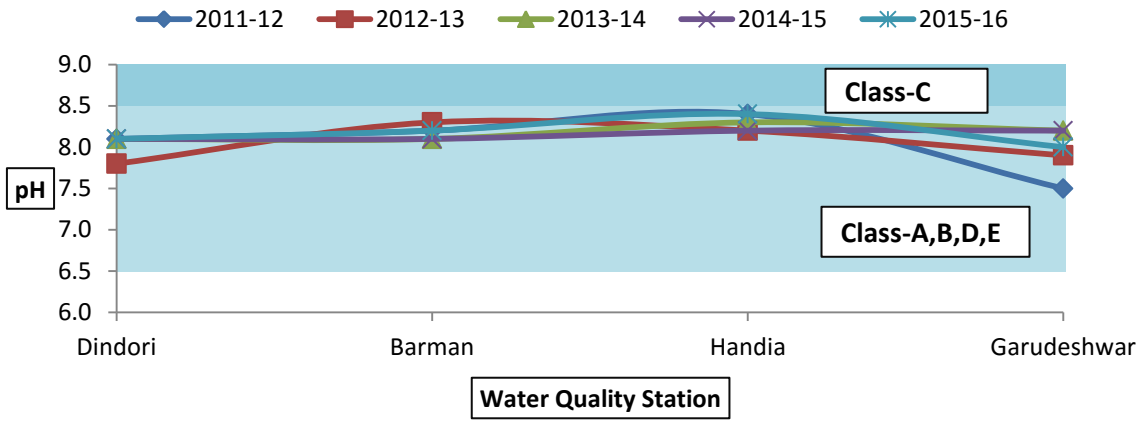
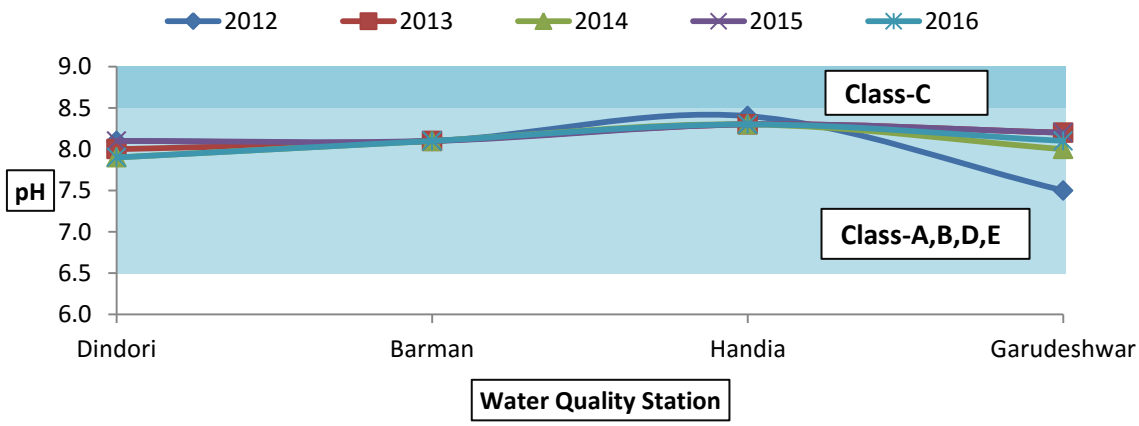


Fig 2.10.3 : Seasonal 5 years trend (2012 to 2016) during Summer (Mar-May) for pH at Narmada Basin



Basin: Narmada (Water Quality Parameter : Biological Oxygen Demand)

Fig 2.10.4 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Narmada Basin

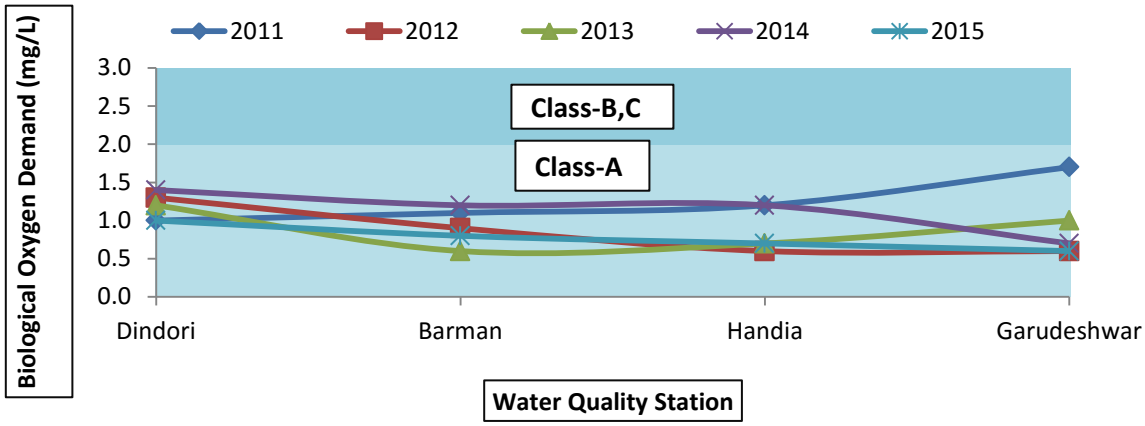


Fig 2.10.5 : Seasonal 5 years trend (2011 to 2015) during Winter (Nov-Feb) for BOD at Narmada Basin

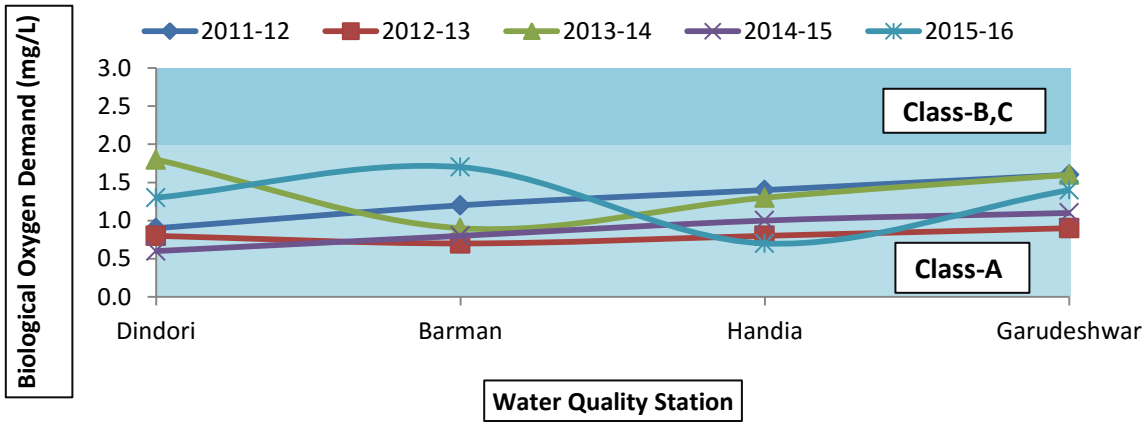
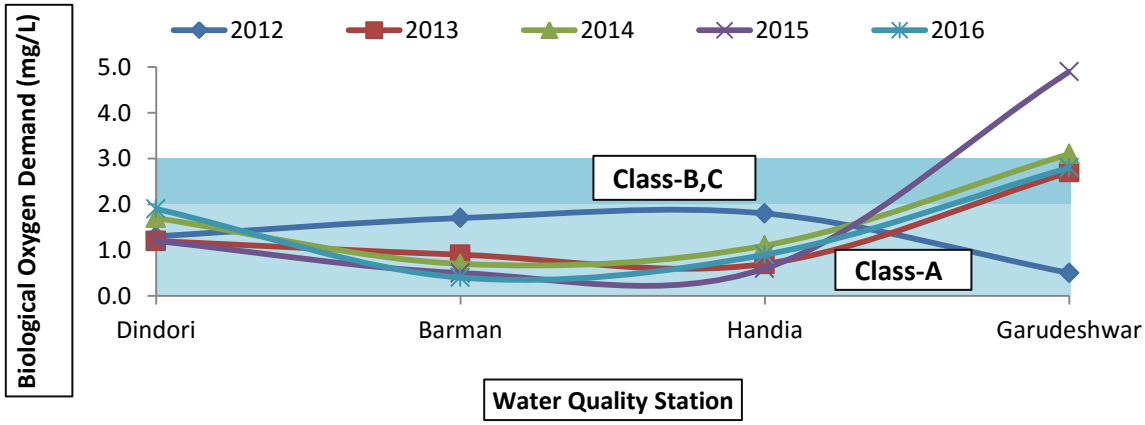


Fig 2.10.6 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for BOD at Narmada Basin



Basin: Narmada (Water Quality Parameter : Dissolved Oxygen)

Fig 2.10.7 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for DO at Narmada Basin

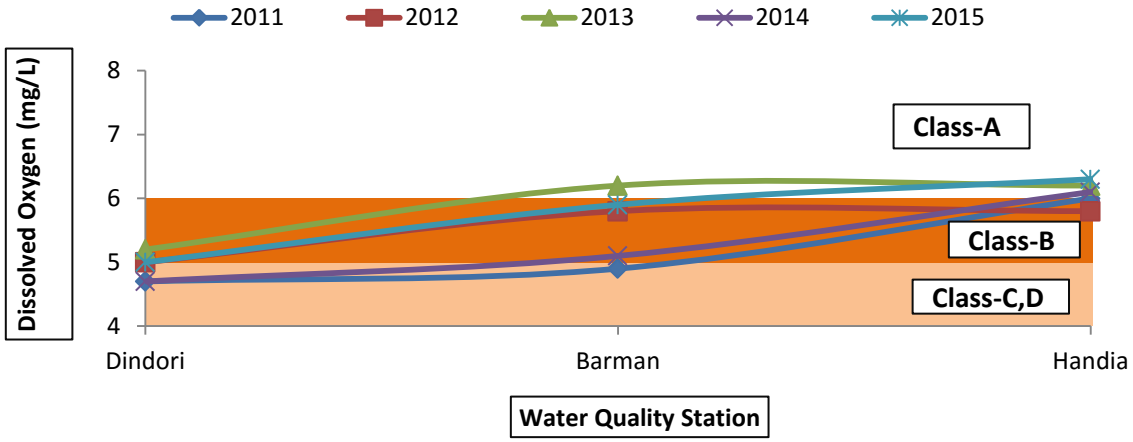


Fig 2.10.8 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for DO at Narmada Basin

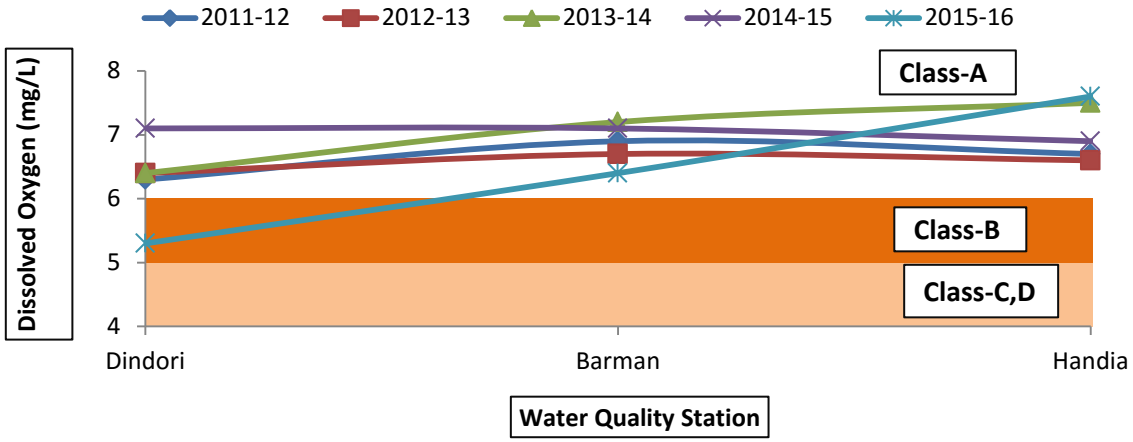
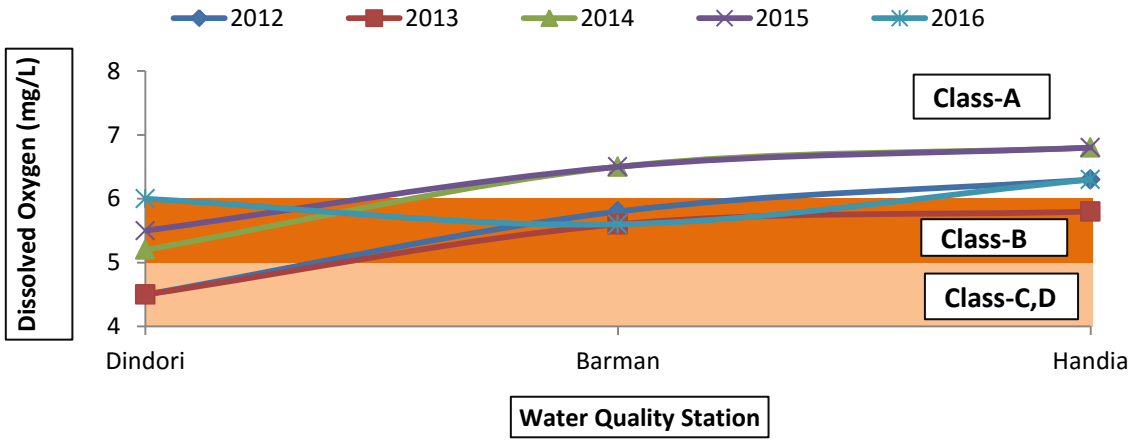


Fig 2.10.9 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for DO at Narmada Basin



Basin: Narmada (Water Quality Parameter : Total Hardness)

Fig 2.10.10 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at Narmada Basin

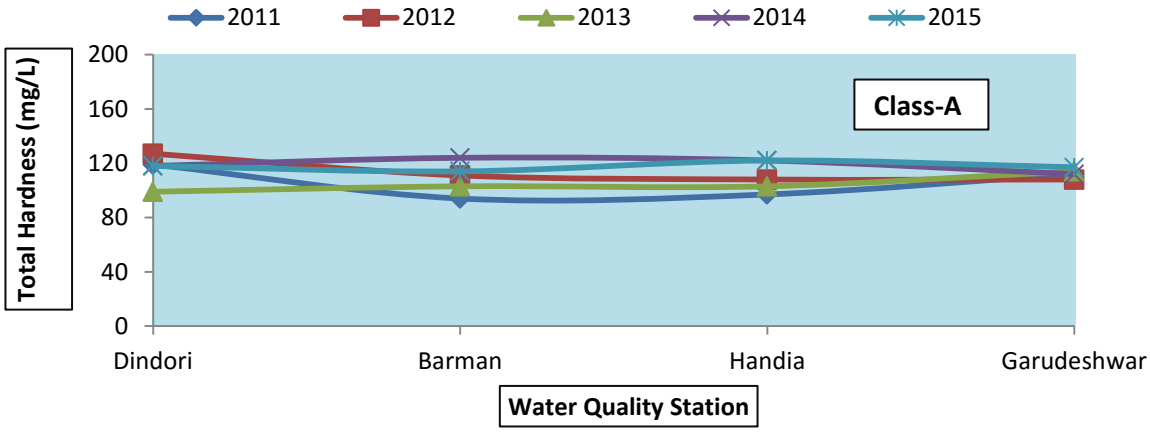


Fig 2.10.11 : Seasonal 5 years trend (2011 to 2015) during Winter (Nov-Feb) for Total Hardness at Narmada Basin

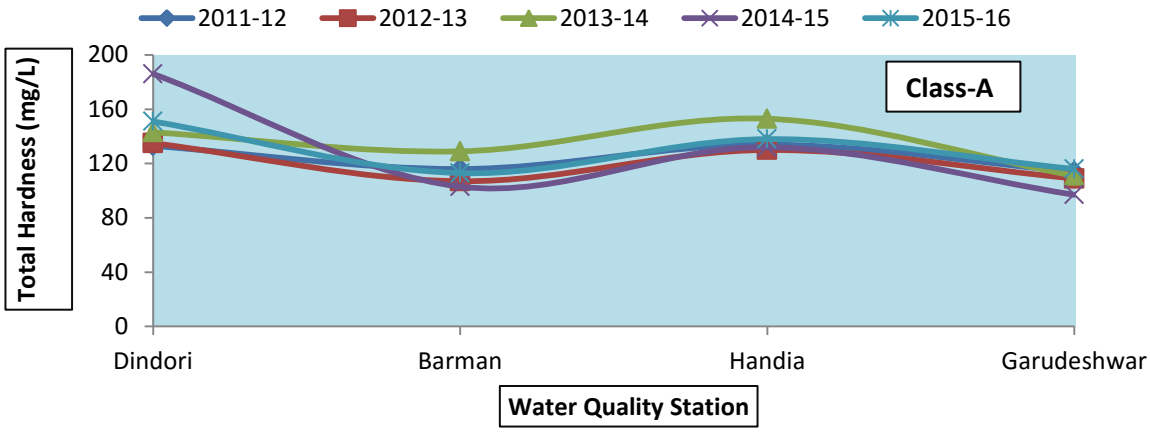


Fig 2.10.12 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for Total Hardness at Narmada Basin

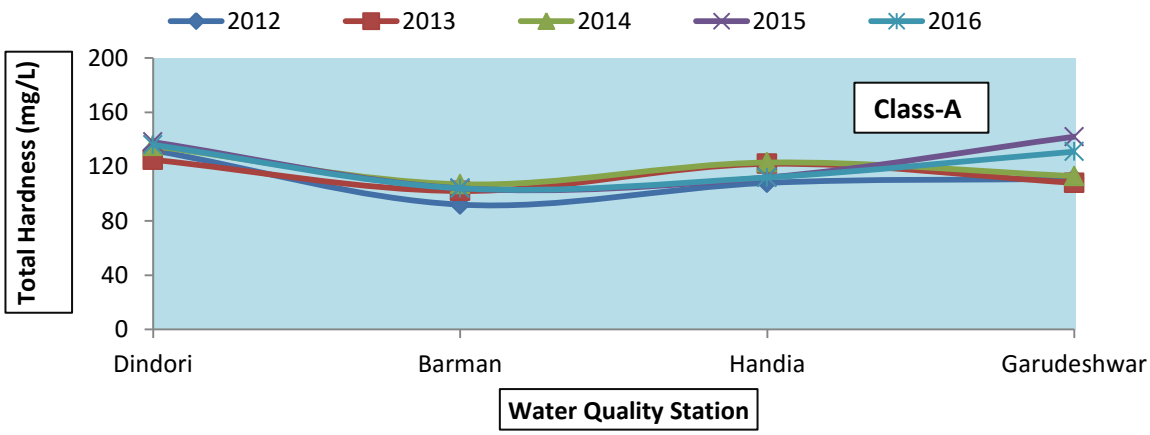
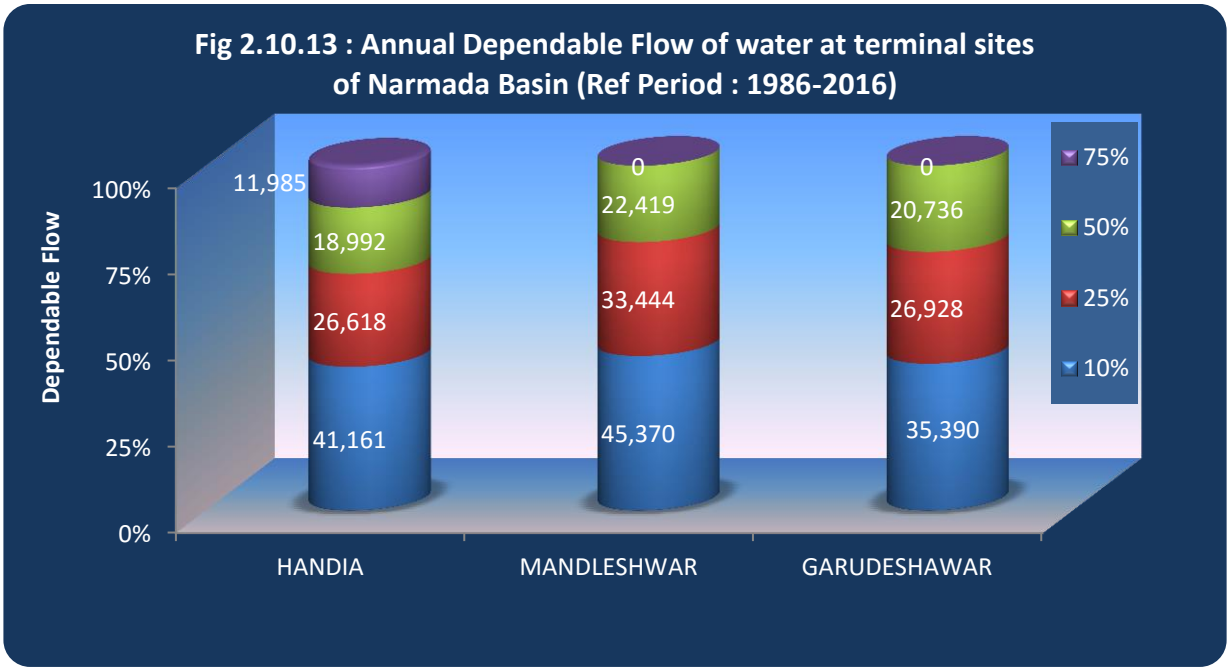


Table 2.10.1: Annual Dependable Flow Of Water at Terminal Sites Of Narmada Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	HANDIA	6/1986 to 5/2016	41161.30	26618.10	18991.70	11984.90	0.00
2	MANDLESHWAR		45370.30	33444.10	22418.50	0.00	0.00
3	GARUDESHAWAR		35390.00	26927.5	20735.50	0.0	0.00

Source SE(C),Govt. of India, CWC, Office of the Chief Eng., Narmada Basin Oraganistion, Bhopal (MP) 2015-16 Narmada Basin.



2.10.5 Land Use Statistics: Table 2.10.2 to Table 2.10.4 present the land use pattern, gross irrigated area and net irrigated area for Narmada basin as compared to all basins(Region-III).

TABLE 2.10.2: LAND UTILISATION PATTERN OF NARMADA AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Narmada	86,993.14	29,561.78	8,573.34	5,679.28	2,516.63	40,662.11	24,154.82	64,816.93
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.10.3: GROSS AREA IRRIGATED BY SOURCES OF NARMADA AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Narmada	6,269.91	-	6,269.91	740.01	11,502.99	8,729.20	20,232.19	3,447.27	30,689.38
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.10.4: NET AREA IRRIGATED BY SOURCES OF NARMADA AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Narmada	5,811.30	-	5,811.30	737.28	9,662.70	7,309.47	16,972.17	2,806.63	26,327.38
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.10.6 Urban Centres: Jabalpur town is the main city in this basin. The second largest urban pocket in the Narmada Basin is Bharuch of Gujarat. Other urbanized centers are Khandawa of Madhya Pradesh.

2.10.7 Industries: There are few large scale and medium scale industries in the area. But as compared with other basins, industrialization is thin in this area.

2.10.8 Minerals: Important minerals found in the basin are Bauxite, Clay, coal, dolomite, graphite, iron ore, manganese, talc & limestone, etc.

2.11 TAPI BASIN

Location: The Tapi River is the second largest westward draining interstate river basin. It covers a large area in the State of Maharashtra besides areas in the states of Madhya Pradesh and Gujarat. The Tapi Basin is the northern-most basin of the Deccan plateau and is situated between latitudes 20^0 05' N to 22^0 03' N and longitudes of 72^0 38' E and 78^0 17' E The Satpura range forms its northern boundary whereas the Ajanta and Satmala hills form its southern extremity. Mahadeo hills form its eastern boundary. The basin finds its outlet in the Arabian Sea in the west. Bounded on the three sides by the hill ranges, the river Tapi, along with its tributaries, more or less flows over the plains of Vidharbha, Khandesh and Gujarat. The Tapi River drains an area of 65,145 sq km out of which nearly 80 percent lies in Maharashtra state.

The Tapi River originates near Multai in Betul district at an elevation of 752metre above m.s.l. The total length of this west flowing river from its origin to its out fall into the sea is 724 km. For the first 282 km the river flows in Madhya Pradesh, out of which 54 km forms the common boundary with Maharashtra State. It flows for 228 km in Maharashtra before entering Gujarat. Traversing a length of 214 km in Gujarat, the Tapi River joins Arabian Sea in the Gulf of Cambay after flowing past the Surat city. The river receives tidal influence for a length of about 20 km upstream from the mouth.

The Tapi River receives several tributaries on both the banks. There are 14 major tributaries having a length more than 50 km. On the right bank, 4 tributaries namely the Vaki, Gomai, Arunavati and Aner join the Tapi River. On the left bank, 10 important tributaries namely the Nesu, Arunavati, Buray, Panjhra, Bori, Girna, Waghur, Purna, Mona and Sipna drain into the main channel. The drainage system on the left bank of the Tapi river is, therefore, more extensive as compared to the right bank area.

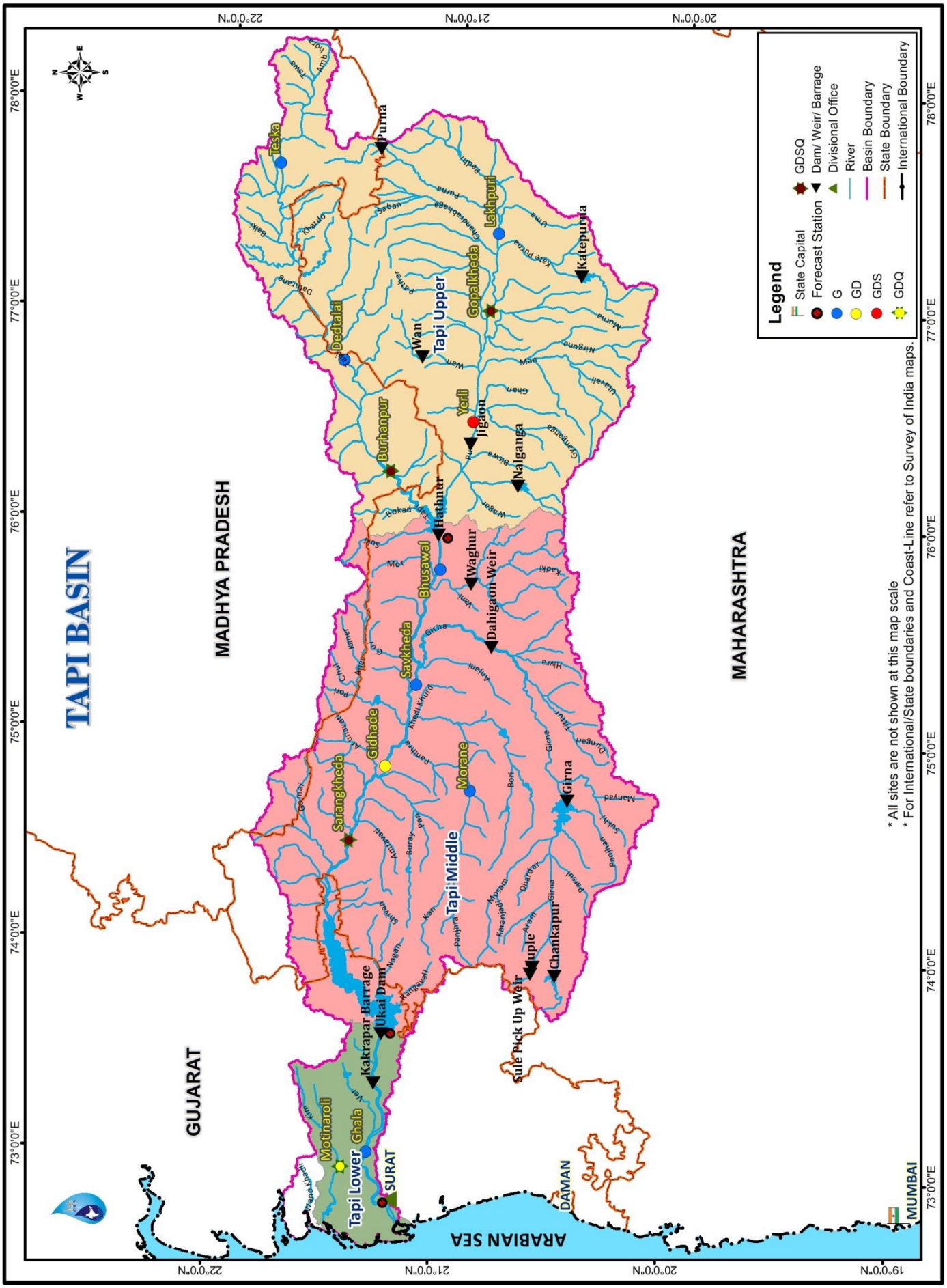
The Purna and the Girna, the two important left bank tributaries together account for nearly 45 percent of the total catchment area of the Tapi River. The Purna is the principal tributary of the Tapi River originating in Betul district in Gawilgarh hills of the Satpura range, mostly drains the three districts Amravati, Akola and Buldhana of Vidharbha Region. The Girna, another major tributary, rises in the Western Ghats and drains Nasik and Jalgaon districts of Maharashtra. The south-west monsoon sets in by the middle of June and withdraws by mid October. About 90% of total rainfall is received during the monsoon months, of which 50% is received during July and August.

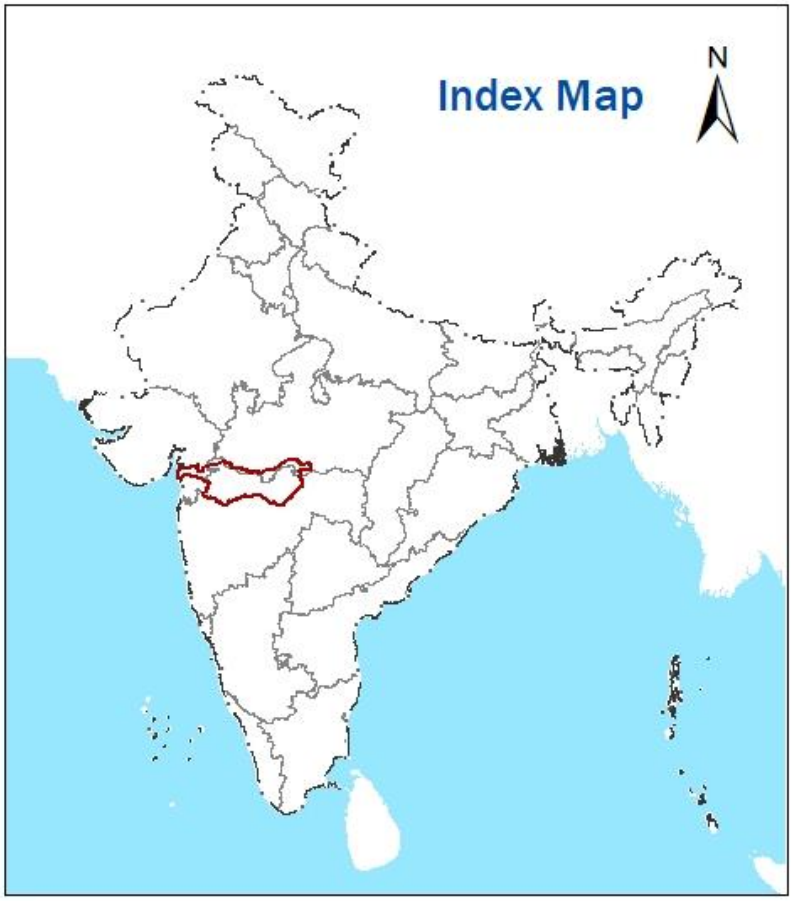
2.11.1 Irrigation Projects: The Ukai Dam, Kate Purna, Nalganga, Girna and Kakrapar Weir are the major projects in the catchment areas of the river basin.

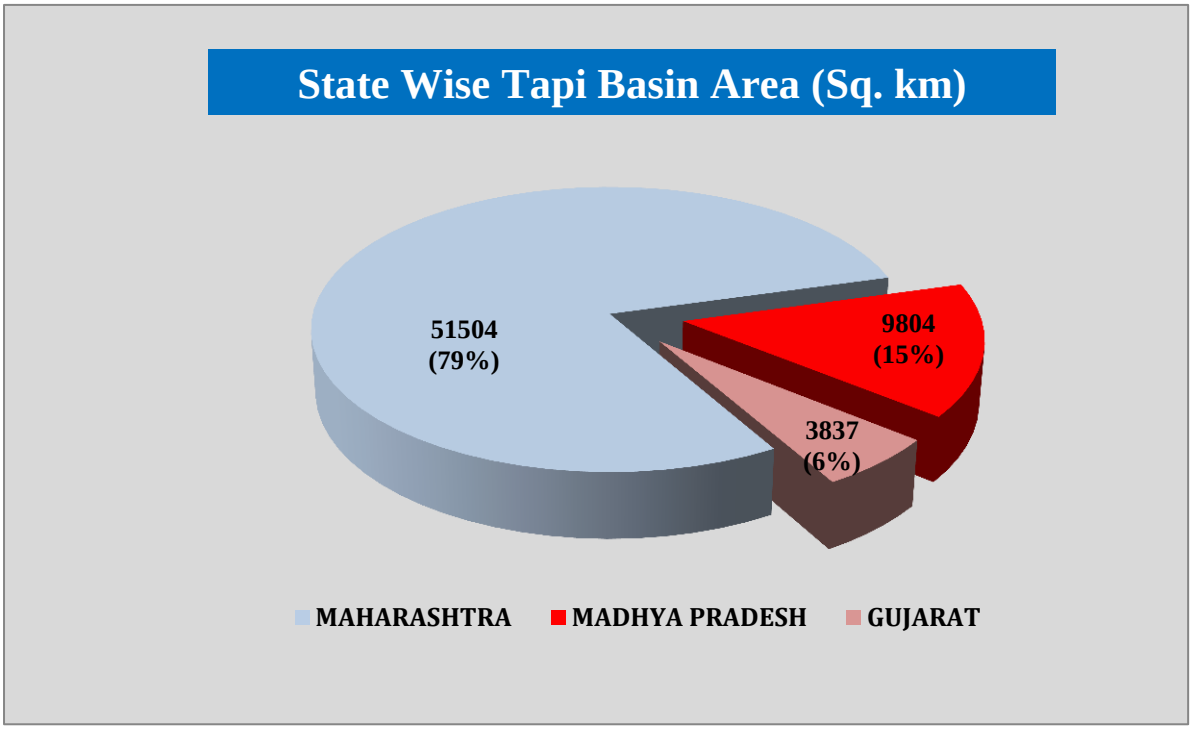
2.11.2 HydrologicalObservation(H.O.)Sites: There are in total 21H.O. sitesin the basin out of which 4 sites are being maintained forGauge, Discharge,Water Quality and Sedimention observations (GDSQ) (as per 2015-16 data).

2.11.3 Peak Water Level: Tapi basin has reported only 6 sites, out of which Gopalkheda has the maximum peak water level at 252.1 metreduring the reference period 2015-16.

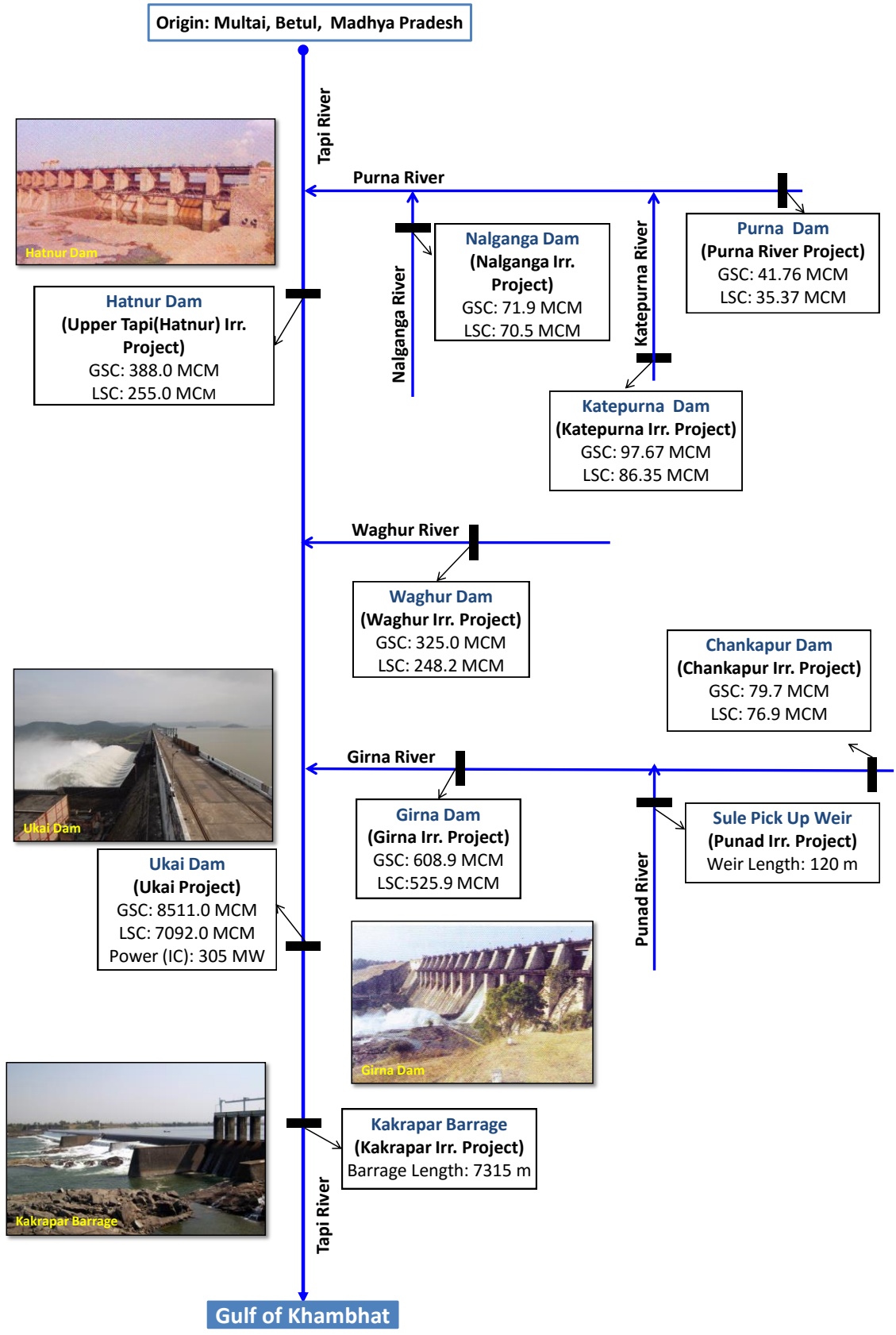
2.11.4 Water Quality: Temporal trends of water quality parameters viz. pH, BOD are given below for two sites of Tapi basin (Fig 2.11.1 to Fig 2.11.2).


TAPI BASIN
MADHYA PRADESH
MAHARASHTRA
GUJARAT
ARABIAN SEA
DAMAN
SURAT
MUMBAI
Legend
State Capital
Forecast Station
G
GD
GDS
GDQ
GDSQ
Dam/ Weir/ Barrage
Divisional Office
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
Teska
Purna
Lakhpuri
Katepurna
Dedtalai
Gopalkheda
Wan
Tapi Upper
Yerli
Jigaon
Burhanpur
Nalganga
Hathnur
Waghur
Bhusawal
Dahigaon Weir
Savkheda
Gidhade
Sarangkheda
Morane
Girna
Tapi Middle
Chankapur
Tuple
Sule Pick Up Weir
Kakrapar Barrage
Ukai Dam
Motinaroli
Ghala
Tapi Lower


Index Map
N


State Wise Tapi Basin Area (Sq. km)
51504
(79%)
9804
(15%)
3837
(6%)
MAHARASHTRA
MADHYA PRADESH
GUJARAT

Tapi River Flow Line Diagram



Basin: Tapi (Water Quality Parameter: pH)

Fig 2.11.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Tapi Basin

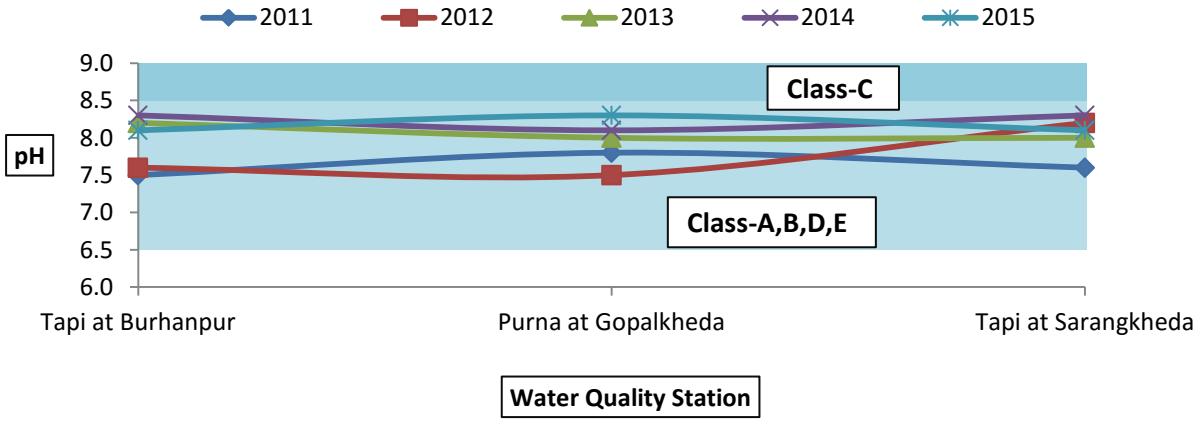


Fig 2.11.2 : Seasonal 3 years trend (2013 to 2015) during Winter(Nov-Feb) for pH at Tapi Basin

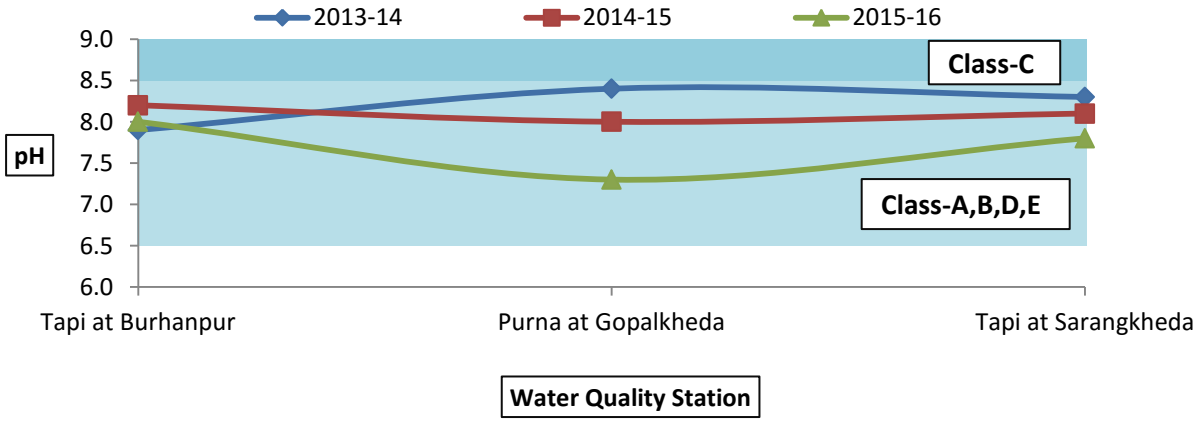
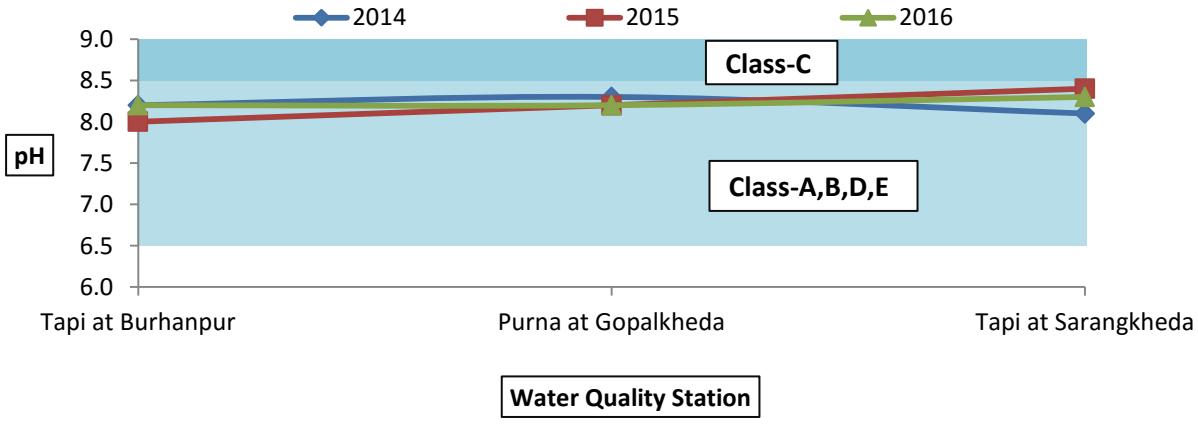


Fig 2.11.3 : Seasonal 3 years trend (2014 to 2016) during Summer(Mar-May) for pH at Tapi Basin



Basin: Tapi (Water Quality Parameter : BOD)

Fig 2.11.4 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Tapi Basin

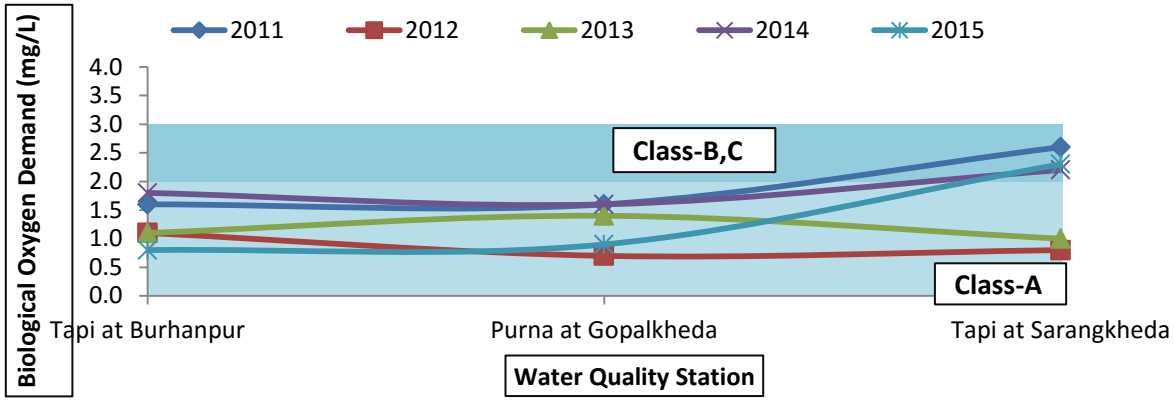


Fig 2.11.5 : Seasonal 3 years trend (2013 to 2015) during Winter(Nov-Feb) for BOD at Tapi Basin

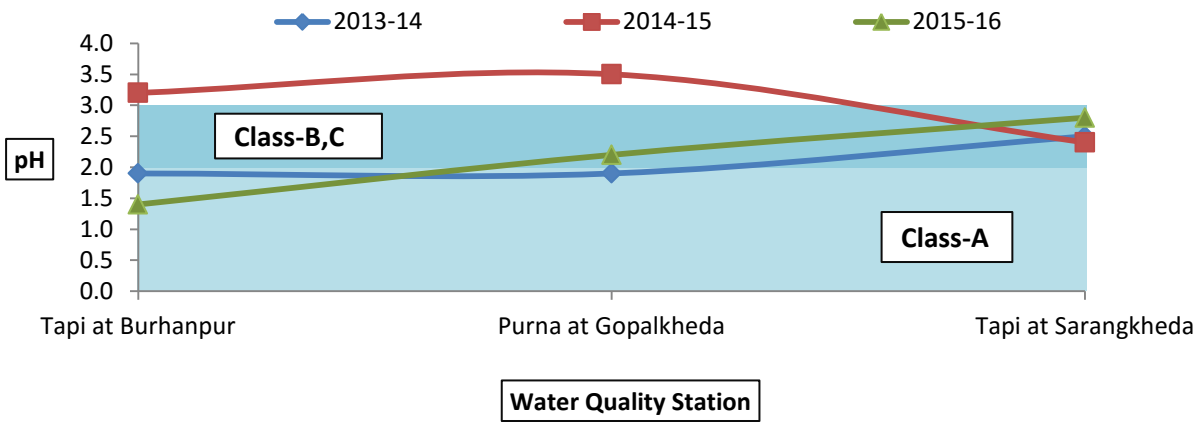
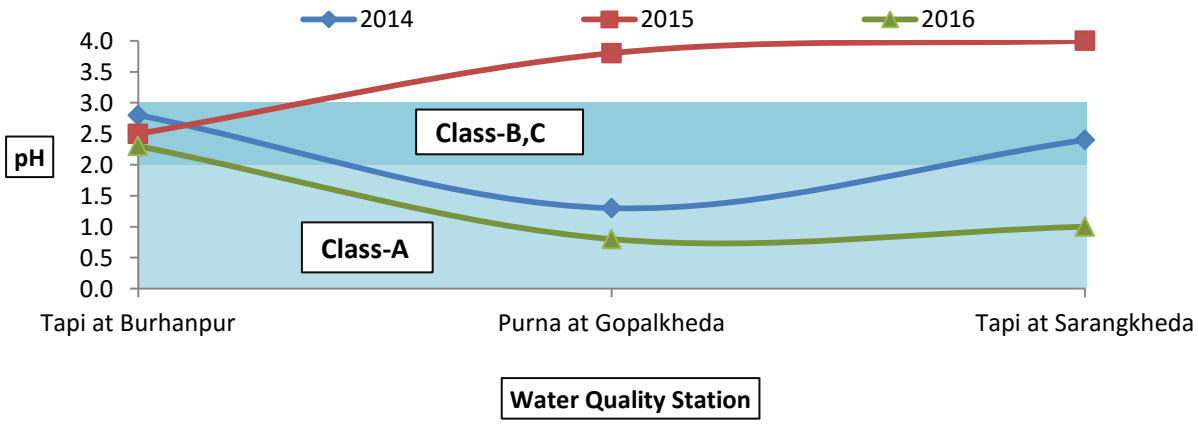
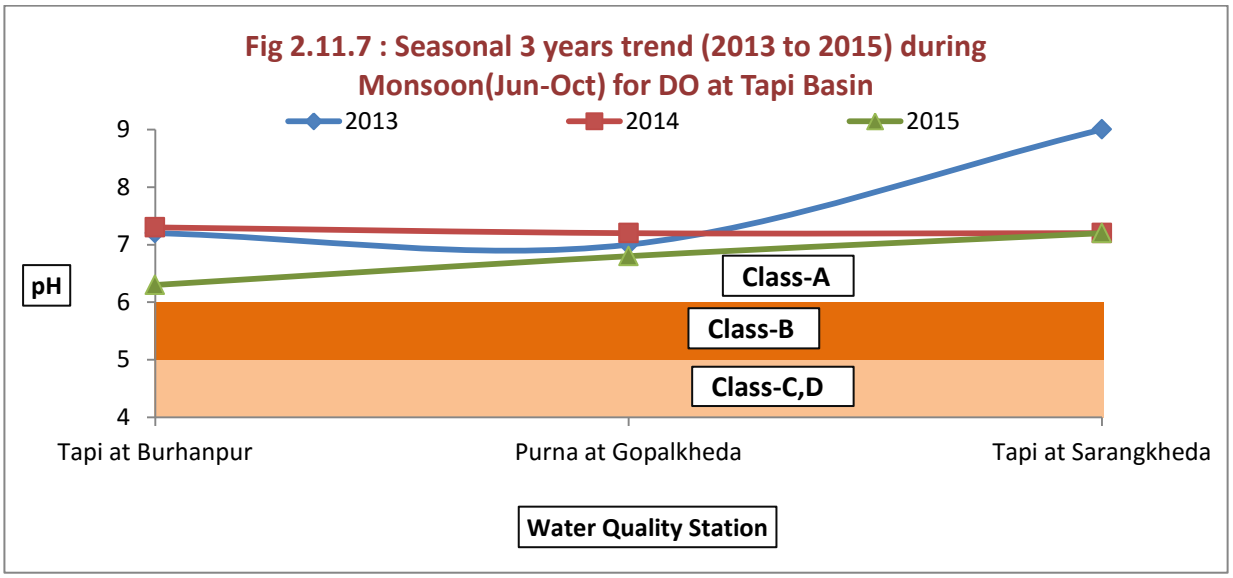


Fig 2.11.6 : Seasonal 3 years trend (2014 to 2016) during Summer(Mar-May) for BOD at Tapi Basin



Basin: Tapi (Water Quality Parameter : Dissolved Oxygen)



Basin: Tapi (Water Quality Parameter : Total Hardness)

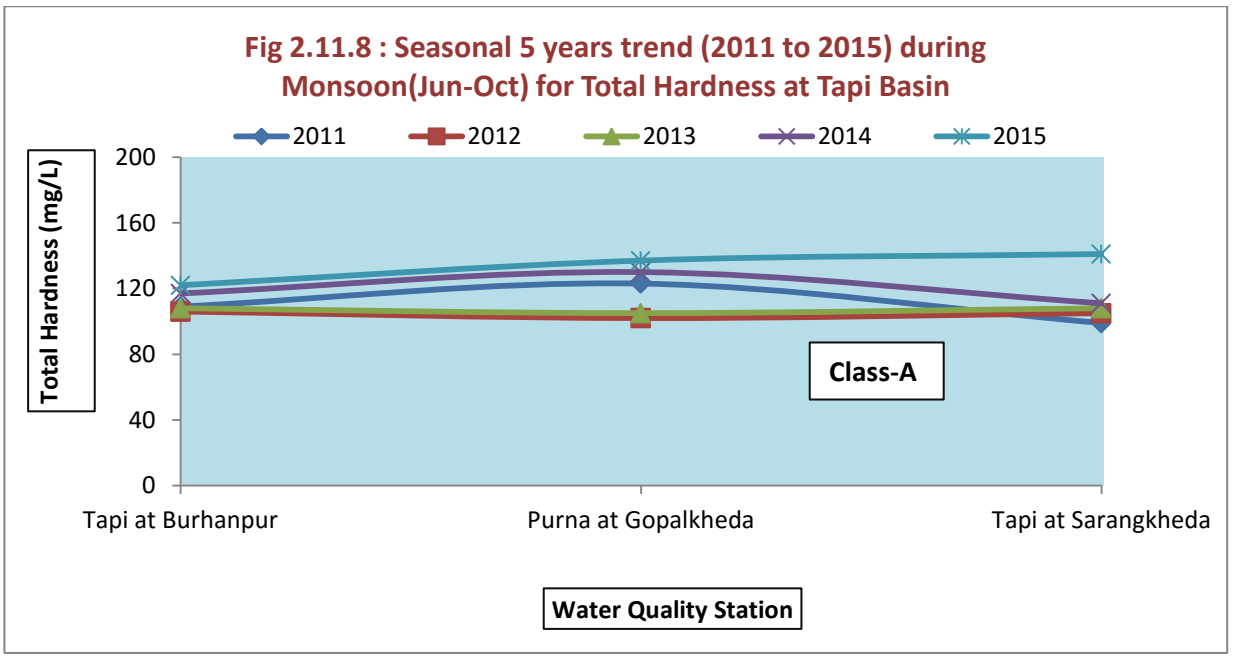


Fig 2.11.9 : Seasonal 3 years trend (2013 to 2015) during Winter(Nov-Feb) for Total Hardness at Tapi Basin

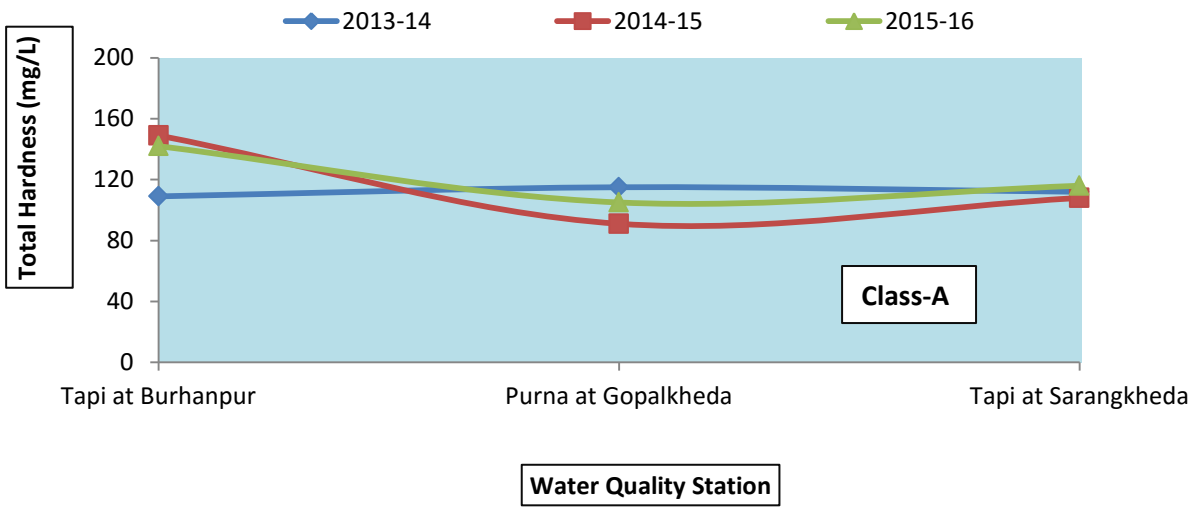


Fig 2.11.10 : Seasonal 3 years trend (2014 to 2016) during Summer(Mar-May) for Total Hardness at Tapi Basin

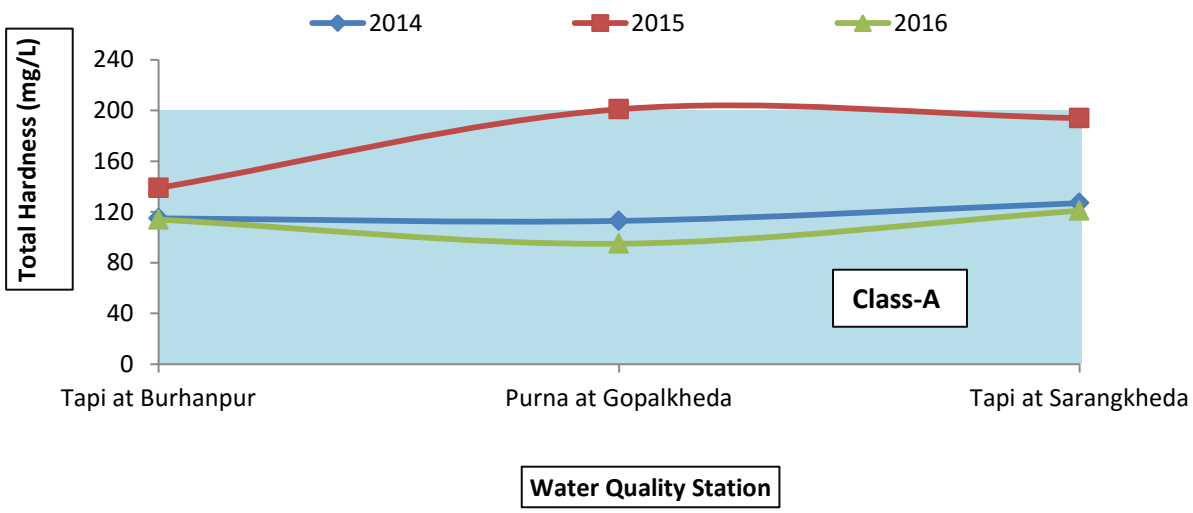
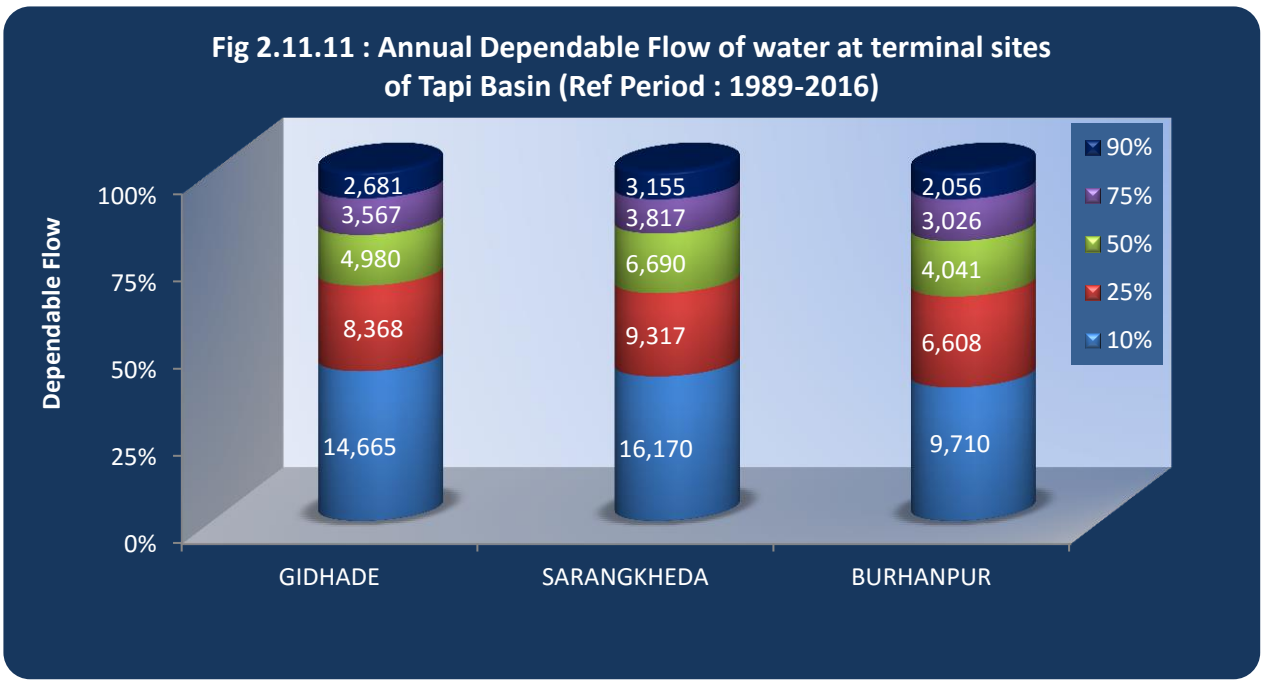


Table 2.11.1: Annual Dependable Flow of Water at Terminal Sites of Tapi Basin

Sl. No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	GIDHADE	6/1989 to 5/2016	14665.10	8367.81	4979.90	3567.17	2680.82
2	SARANGKHEDA		16169.72	9316.66	6689.61	3816.83	3154.94
3	BURHANPUR		9709.53	6607.72	4041.15	3026.23	2055.71



2.11.5 Land Use Statistics: Table 2.11.2 to Table 2.11.4 present the land use pattern, gross irrigated area and net irrigated area for Tapi basin as compared to all basins(Region-III).

TABLE 2.11.2: LAND UTILISATION PATTERN BY TAPI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Tapi	9,635.09	4,277.45	888.77	505.00	207.02	3,756.84	1,332.38	5,089.22
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.11.3: GROSS AREA IRRIGATED BY SOURCES OF TAPI AND ALL RIVER BASINS(REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Tapi	226.60	-	226.60	60.06	535.97	946.62	1,482.59	292.60	2,061.86
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.11.4: NET AREA IRRIGATED BY SOURCES OF TAPI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Tapi	220.78	-	220.78	60.06	522.88	901.81	1,424.69	264.40	1,969.94
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.11.6 Urban Centres: Surat is the most important city in the area. Other cities are Amravati, Akola, and Jalgaon.

2.11.7 Industries: Important industries in the basin are Paper Mills and Sugar Mills. Other industries are Cotton Spinning Mills, Dal, Oil and Wood cutting Mills.

2.12 WEST FLOWING RIVERS FROM TAPI TO TADRI BASIN

Location: The basin of West flowing rivers consists of all small independent river basins of peninsular India lying to the south of Krishna basin, except Cauvery basin draining into Arabian Sea. There are about 31 major and minor rivers basins in this region.

The basin of the West Flowing Rivers located in the South West corner of the peninsular India covers areas in the states of Maharashtra, Karnataka, Tamilnadu and Kerala. There are a number of medium and minor river basins in this region. All the rivers originate from the high mountains of the Western Ghats and exhibit similar characteristics. They have steep high banks, which rarely overflow or cause floods.Important west flowing river sub-basins are described as under.

2.12.1 Ulhas: The Ulhas River is one of the West Flowing rivers in Maharashtra falling into the Arabian Sea. The boundary of the basin consists of the main Sahyadri hills on the east, western off shoots on the north and south and on the west, a narrow opening at the end leading to the sea. The Ulhas basin lies between north latitudes of 18^0 $44^{'}$ to 19^0 $42^{'}$ and east longitudes of 72^0 $45^{'}$ to 73^0 $48^{'}$. The Ulhas drains an area of 4,637 sq km and lies completely in Maharashtra. The Thane, Raigad and Pune districts fall in the basin. The Ulhas rises from Sahyadri hill ranges in the Raigad district of Maharashtra at an elevation of 600m above msl. The total length of the Ulhas from its origin to its outfall in to the Arabian Sea is 122 km. The basin receives most of the rainfall from South-West monsoon during June to October. The important tributaries of the Ulhas River are Pej, Bhalla, Barvi,Salpe and Bhivapuri.There is one H.O. site for each of Gauge, Discharge, Sedimentation and Water Quality.

2.12.2 Kal: The Kal River is a major tributary to river Savitri originates from the Sahyadri hill ranges in the Raigad district of Maharashtra. It drains an area of 670 Sq.Km which lies completely in Raigad district. The total length of this river from its origin to its confluence with the Savitri is 40 Km. Water quality station on this river is established at ***Mangaon***, where water quality observations are being carried out from 02.07.1993.

2.12.3 Kajvi: The Kajavi River rises in the Vishalghat region of Sahyadri hills and flows West ward and joins the Arabian Sea near Ratnagiri port where a 10 km long creak named Bhatya Creak has been formed. During monsoon, tidal effect is felt up to village Hercheri that is about 25 km. from the mouth of river. The nature of Bed is sandy mixed with gravels. The H.O. site is at Anjanari village in Lanja Taluk of Ratnagiri District of Maharashtra State.

2.12.4 Gad: The Gad originates from the Sahyadri hill ranges in the Sindhudurg district of Maharashtra state. It drains an area of 890 Sq.Km and has a length of 66 Km from its origin to its out fall into the Arabian Sea. The only water quality on this basin at Adavali has been shifted to ***BelneBridge*** in June 2000.

2.12.5 Mandovi: The Mandovi River is one of the main West Flowing Rivers of Goa State. The Mandovi Basin lies between north latitudes of 15º 15' to 15º 40’ and east longitudes of 73º 15’ to 73º45’ approximately. There are two hydrological observation stations being maintained by CWC located at Ganjim & Collem. The Mandovi River drains an area of 1,550 sq km.The Mandovi River rises in the Jamboti Ghats in Karnataka State. At the origin, near the village Mabulyesheir, it is known as Bhaburnal, which is at an elevation of 600m above M.S.L. The total length of this West Flowing River is 62 km.The important tributaries are Sarang, Mahainada, Udel, Lohi, and Khandepar.The average rainfall in the Mandovi Basin is

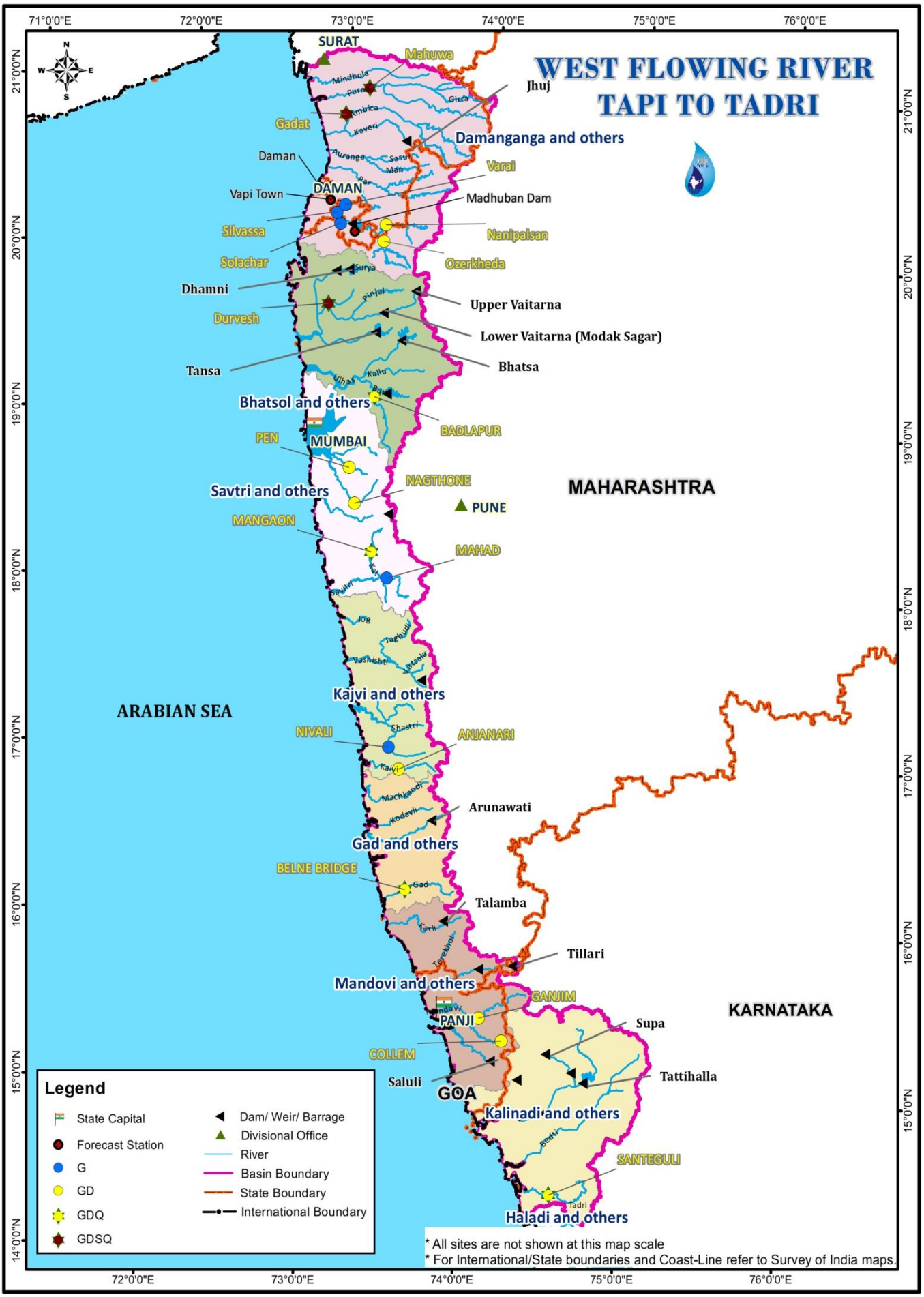
3,484mm. The lowest and highest temperatures recorded are 9.30º C during January 1937 and 42.6º C during March 1959 respectively.

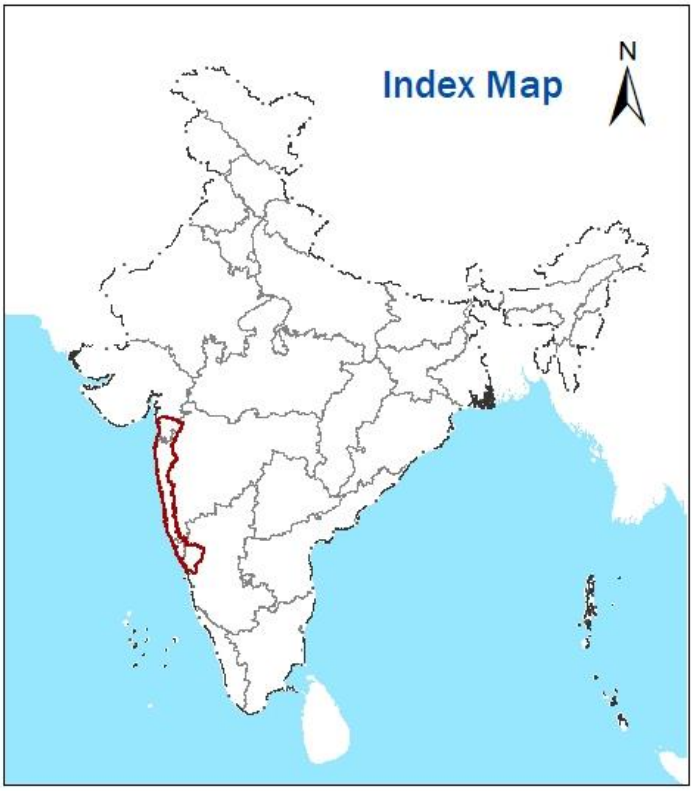
2.12.6 Aghanashini: The River Aghnashini originates from Gadihalli in the Western Ghats of Karnataka. The river has a catchment area of 1350 Sq.Km. and its total length is 117 Km. The river flows mostly through forest area and the only water quality station on this river is at ***Santeguli***. Water Quality Monitoring of this basin commenced with the introduction of Water Quality observations at Santeguli with effect from 01.09.1993.

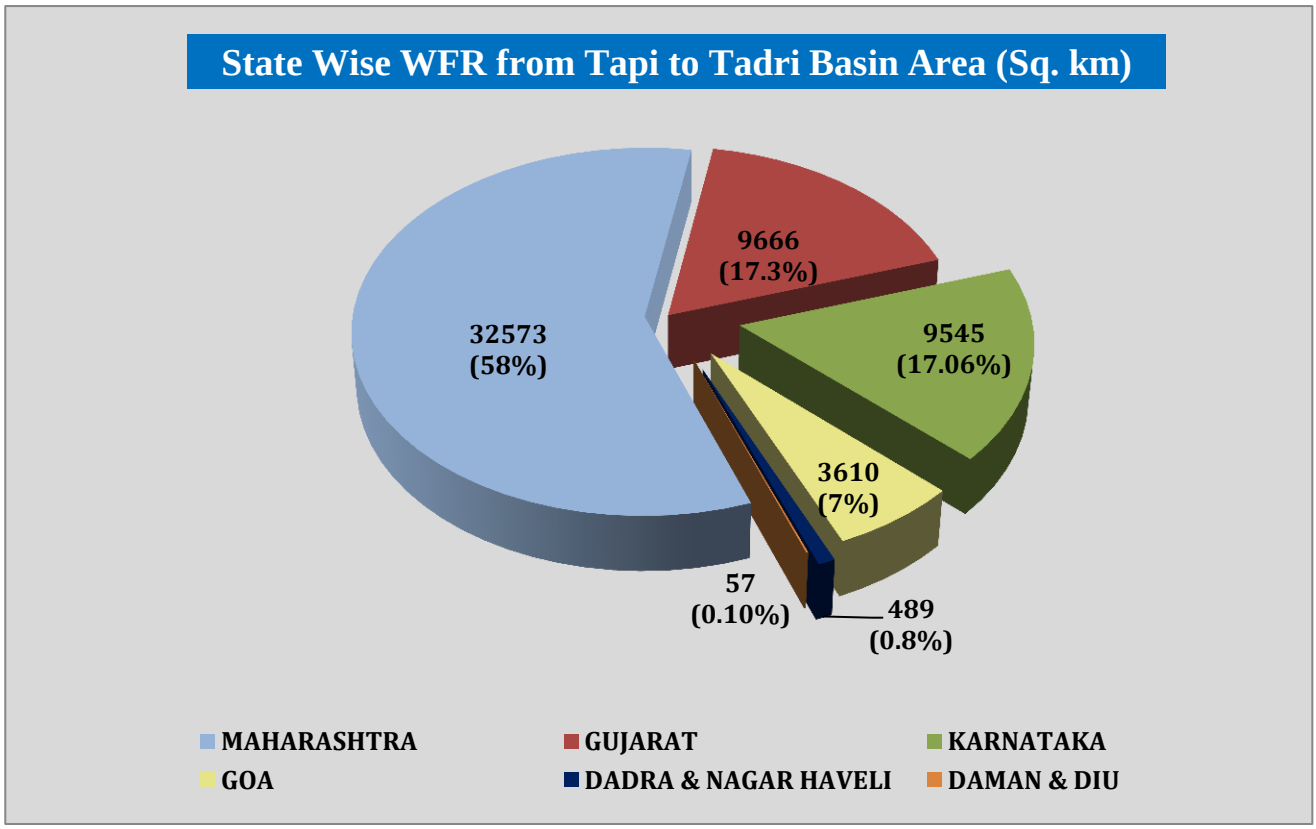
2.12.7 Irrigation Projects: The Anjunem in the sub-basin of Mandovi, Kal in the sub-basin of Kal, Swarna Dam in the sub-basin of Swarna, Kattampally in the sub-basin of Valapatanam, Malampuzha Reservoir, Tirumurthi and Aliayar in the sub-basin of Bharathapuzha, Chalakudi River Diversion Scheme, Sholayar H.E.S and Peringilkuthu Left Bank Scheme in the sub-basin of Chalakudi, Periyarvalley Project, Edamalayar and Idukky Hydel Project in the sub-basin of Periyar, Pamba Hydel Project in the sub-basin of Pamba, Kalada Irrigation Project in the sub-basin of Kalada are the major projects in the catchment areas of the west flowing river basin.

2.12.8 Hydrological Observation(H.O.) Sites: There are 26 H.O. sites in the basin, out of which 3 sites are being maintained for recording observations on Water Quality, gauge, Discharge and sedementation. Water Quality observations are being measured at 7 of these stations (as per 2015-16 data).

2.12.9 Peak Water Level: This basin has reported information in respect of 9 sites during the reference period 2015-16. The peak water level of the sites remains in two digits for all sites. At Collem site, the peak water level touched at71.55 metre on 10.08.2008.


WEST FLOWING RIVER
TAPI TO TADRI
SURAT
Mahuwa
Jhuj
Damanganga and others
Gadat
Daman
DAMAN
Vapi Town
Varai
Madhuban Dam
Silvassa
Nanipalsan
Solachar
Ozerkheda
Dhamni
Upper Vaitarna
Durvesh
Lower Vaitarna (Modak Sagar)
Tansa
Bhatsa
Bhatsol and others
BADLAPUR
PEN
MUMBAI
NAGTHONE
Savtri and others
PUNE
MAHARASHTRA
MANGAON
MAHAD
Kajvi and others
ARABIAN SEA
NIVALI
ANJANARI
Arunawati
Gad and others
BELNE BRIDGE
Talamba
Tillari
Mandovi and others
GANJIM
PANJI
KARNATAKA
Supa
COLLEM
Saluli
Tattihalla
GOA
Kalinadi and others
SANTEGULI
Haladi and others
Legend
State Capital
Forecast Station
G
GD
GDQ
GDSQ
Dam/ Weir/ Barrage
Divisional Office
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
71°0'0"E
72°0'0"E
73°0'0"E
74°0'0"E
75°0'0"E
76°0'0"E
21°0'0"N
20°0'0"N
19°0'0"N
18°0'0"N
17°0'0"N
16°0'0"N
15°0'0"N
14°0'0"N


Index Map
N


State Wise WFR from Tapi to Tadri Basin Area (Sq. km)
9666
(17.3%)
9545
(17.06%)
32573
(58%)
3610
(7%)
57
(0.10%)
489
(0.8%)
MAHARASHTRA
GUJARAT
KARNATAKA
GOA
DADRA & NAGAR HAVELI
DAMAN & DIU

WFR from Tapi to Tadri Flow Line Diagram

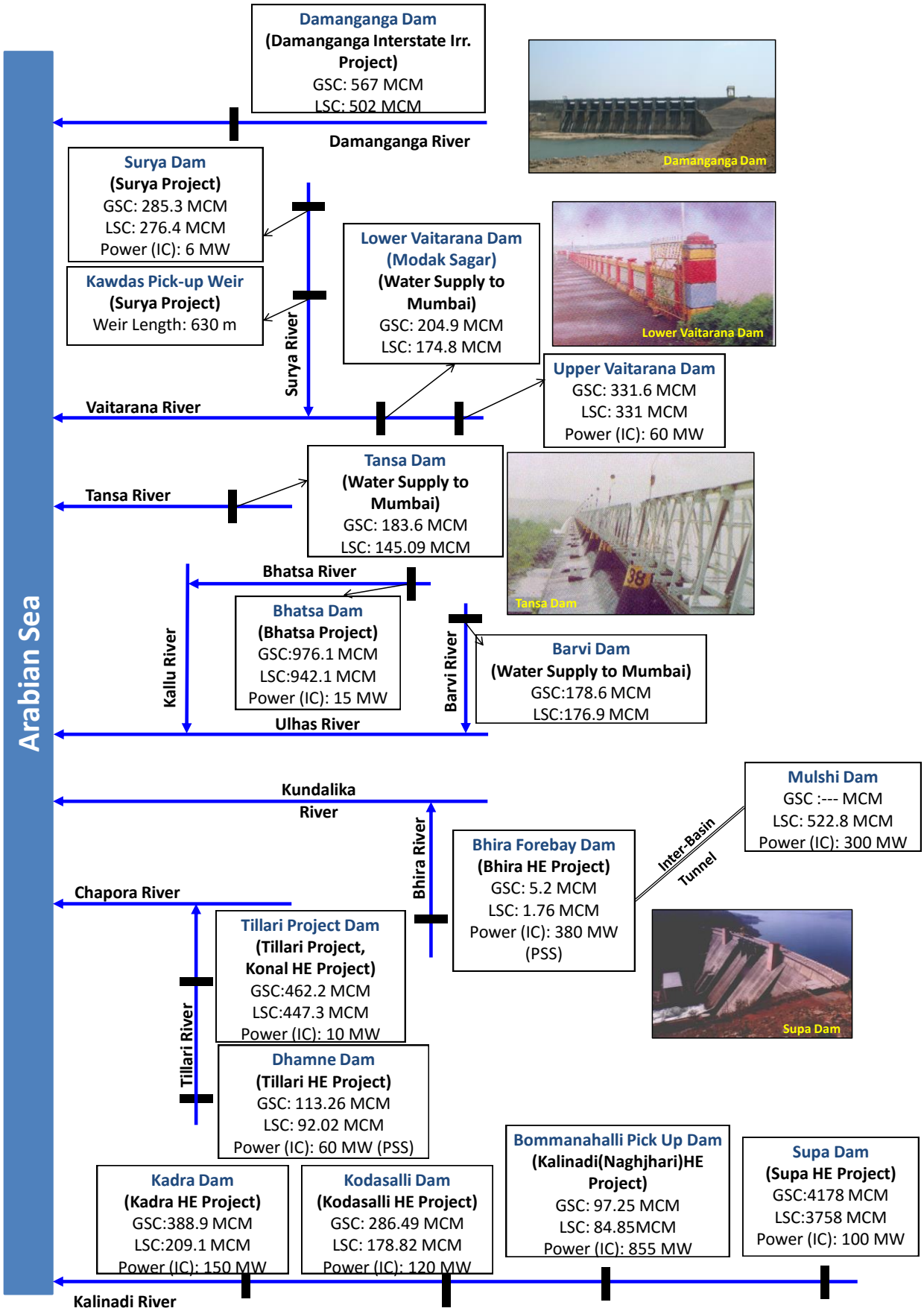
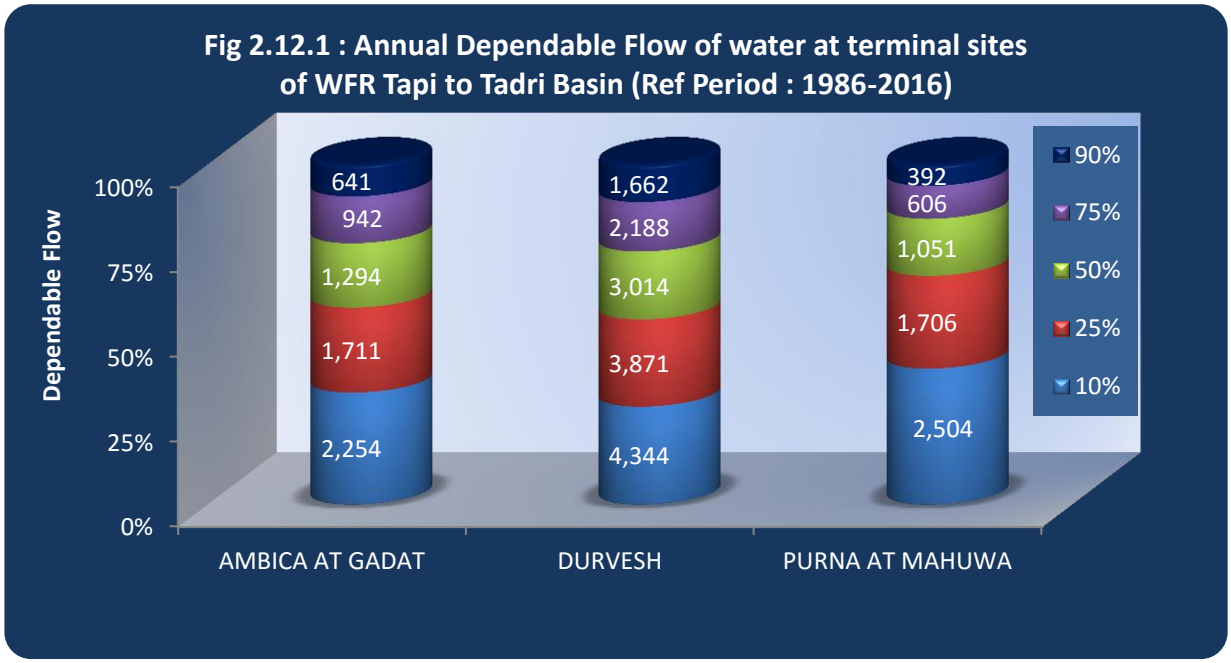


Table 2.12.1: Annual Dependable Flow Of Water at Terminal Sites OfWFR Tapi to Tadri Basin

SL No.	Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	AMBICA AT GADAT	6/1986 to 5/2016	2254.30	1711.15	1294.17	941.95	640.66
2	DURVESH		4343.63	3870.58	3013.85	2188.08	1662.36
3	PURNA AT MAHUWA		2504.16	1705.80	1051.19	606.09	391.52

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore



2.12.10 Land Use Statistics: Table 2.12.2 to Table 2.12.4 present the land use pattern, gross irrigated area and net irrigated area for the basin as compared to all basins(Region-III).

TABLE 2.12.2: LAND UTILISATION PATTERN OF WFR TAPI TO TADRI AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
WFR tapi to tadri	15,231.91	8,502.01	1,025.46	849.90	579.90	4,274.64	1,203.10	5,477.74
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.12.3: GROSS AREA IRRIGATED BY SOURCES OF WFR TAPI TO TADRI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
WFR tapi to tadri	255.41	-	255.41	258.17	371.79	262.57	634.36	271.59	1,419.52
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.12.4: NET AREA IRRIGATED BY SOURCES OF WFR TAPI TO TADRI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
WFR tapi to tadri	200.47	-	200.47	257.99	315.07	229.25	544.32	232.24	1,235.02
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source: Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.13 WEST FLOWING RIVERS FROM TADRI TO KANYAKUMARI BASIN

Location: The basin extends over states of Kerala, Karnataka, Tamil Nadu and Union Territory of Puducherry having an area of 56,177 Sq. km, which is 1.73 % of total geographical area of the country with a maximum length and width of 777 km and 135 km respectively. It spreads between 74°25' to 77°36' east longitudes and 8°3' to 14°24' north latitudes. The basin is bounded by Sahyadri hills on the north, by the Western Ghats on the east, by Indian Ocean on the south and by the Arabian Sea on the west. The basin is comprised of three sub-basins; *Netravati and Others sub basin, Periyar and others sub basin* and *Varrar and others sub basin.*

The major independent rivers in the basin are the *Varahi, Netravati, Payaswani, Valapattanam, Chaliyar, Kadalundi, Bharathapuzha, Periyar, Muvattupula, Minachil, Pamba, Achankovil, Kallada and Vamanapuram.*

The major part of basin is covered with agriculture land accounting to 50.82% of the total area while 34.72% is covered by Forest. The salient features for the basin are described in Table 2.

Brief descriptions of the rivers are given below.

2.13.1 Haladi: This river Haladi originates in the Western Ghats near Someswara in the reserved forest of Karnataka. The river has a drainage area of 781 Sq.Km and a total length of 70 Km. The water quality station on this river is at ***Haladi***, where water quality observation commenced from 01.09.1993.

2.13.2 Swarna: This river Swarna is one of the major west flowing rivers in Dakshina Kannada district. Total drainage area of this river up to the site is 327 Sq.Km. and the river flows for a distance of 61.05 Km up to its confluence with sea. The river is called Yennehole in the initial stages and Swarna after its confluence with its tributary Kaud-hole. The water quality station on this river is established at ***Yennehole***, where water quality observations are being carried out from 01.09.1993.

2.13.3 Netravathi: The Netravathi rises between Kudermukh and Ballalaryan Durga in the Dakshina Kannada district of Karnataka at an elevation of about 1000 metre at 75^0 $20^{'}$ East longitude and 30^0 $10^{'}$ North latitude flows generally in north-south direction for 40 km up to Gohattu, where it takes a turn towards the west and flow in east-west direction practically up to its outfall into the Arabian Sea near Mangalore. The climate of the basin is characterized by heavy rainfall, high humidity and oppressive weather in hot season. The hot season from March to May is followed by the South West monsoon from June to September. The Kumaradhara, a major left-bank tributary joins it near the village Uppinangadi. The total length of the Netravathi is 103 km from its source to the outfall. The river drains an area of 3,657 sq km. No major project is in existence in this basin. However, the investigations for the project titled multi-purpose Netravathi Anicut Scheme have been completed. There is one H.O. site for each of Gauge, Discharge, Sedimentation and Water Quality.

2.13.4 Payaswani: The Payaswani, also known as the Chandragiri in the lower reaches, originates from the Patti Ghat reserve forest in Coorg District of Karnataka. The river covers a distance of 105 Kms. and drains an area of 1538 Sq. kms. The only water quality station on this basin is located at ***Erinjipuzha,*** where Water Quality observation commenced from 01.07.1988.

2.13.5 Valapatanam: The Valapatanam river rises south of Ammatti village in the district of Coorg in Karnataka State at 75^0 $52^{'}$ east longitude 12^0 $13^{'}$ north latitude at an elevation of 900m above msl. The river has a total length of 101 km from its source to its fall into the Arabian Sea. The river drains an area of 1,867 sq km of which 546 sq km lies in Karnataka and rest in Kerala. The climate of this basin is characterized by heavy rainfall, high humidity and opperasive weather in hot season. The Kattampally multipurpose project is the main irrigation Projects in this basin. The Kattampally project has been planned in two stages. The stage I will not only prevent saline water intrusion and reduction of flood but also provide irrigation benefits to an area of 1,280 ha. The second stage of the project is expected to irrigate an additional area of 1,650 hectares. There is one H.O. site for each of Gauge, Discharge, Sedimentation and Water Quality.

2.13.6 Chaliyar: The Chaliyar, known in the lower reaches as the Beypore, is one of the major rivers of Kerala. The main river starts from the Elambalari hills at an altitude of 2,067m above msl. It is formed by the confluence of numerous streams and rivers. Its important tributaries are the Cherupuzha, The Iringipuzha, the Vadapurampuzha and the Chaliyarpuzha. The Chaliyar flowing for a total length of about 169 km and finally joins the Arabian Sea at Beypore. The river drains a total area of about 2,933 sq km of which 2545 sq. Km lies in Kerala.and 388 sq. Km in Tamilnadu. Good rainfall and humid temperature throughout the year are the characteristic of the basin. The climate along the coastal area of the basin is generally hot with high humidity.There is one H.O. site for each of Gauge, Discharge, Sedimentation and Water Quality.

2.13.7 Kadalundi: The Kadalundi river originates from Karuvarakkundu village in the Calicut District of Kerala State. It drains a total area of 1,112 Sq.kms. and traverses about 130 Kms. Water Quality station on this basin is located at ***Karathodu*** only, where Water Quality observation commenced from 01.12.1988.

2.13.8 Bharathapuzha: The Bharathapuzha River is the second longest west flowing river that drains into the Arabian Sea in Kerala State. This basin is bounded in the east by the Cauvery basin and in the west by the Arabian Sea. The basin lies approximately between 10^0 $26^{'}$ and 11^0 $13^{'}$ north latitudes and 75^0 $53^{'}$ to 77^0 $13^{'}$ east longitudes. Its drainage area is spread in Tamilnadu and Kerala states. The basin is elongated in shape and finds its outlet into the Arabian Sea. The total drainage area of the basin is 6,186 sq km out of which nearly 71 percent lies in the Kerala State. The Bharathapuzha basin receives copious rainfall during the south west monsoon and it falls in the rain shed region of the Western Ghats. There are five H.O. sites for each of Gauge, Discharge, Sedimentation and Water Quality.

2.13.9 Chalakudi: The Chalakudi River has its origin in the Annamalai hills of Western Ghats. It is formed by the confluence of five streams namely the Parambikulam, the Kuriarkutty, the Sholayar, the Karappara and the Anakayam. The river has a length of 130 km. The total drainage area of the river is 1,704 sq km of which 1404 sq. Km lies in kerala and the rest in Tamil Nadu. Good rainfall and humid atmosphere are felt throughout the year. The climate along the coastal area of this basin is generally hot with high humidity. There is one H.O. site for each of Gauge, Discharge, Sedimentation and Water Quality.

2.13.10 Periyar: The Periyar River is 244 km in length and the longest river of Kerala and drains an area of 5,398 sq km. It rises at the forest land Sivagiri peak 80 km south of Devikulam at an elevation of 2,438m above msl and traverses the steep mountainous terrain before it is joined by the Mullaiyar, 16 km downstream. The river then turns west and continues to flow in the direction for about 16 km in a sandy bed. After a winding course of

about 13 km, the river reaches Vandiperiyar and passes through a second narrow gorge below which the Perumthura joins it. Further down, it is joined by six tributaries of which the important tributary Edmala joins the Periyar. Passing Malayattur and thereafter taking a meandering course, the river reaches Alwaye where it divides itself into two branches. The upper branch joins the Chalakudi River at Punthenvelikara and then expands into a broad sheet of water at Munambham. The other branch taking a southerly course is broken up into a number of small channels, which fall into the Vembanad Lake as Varapuzha. There are 2 Gauge, 2 Discharge, 2 water quality and one sedimentation type of H.O. sites.

2.13.11 Muvattupuzha: River Muvattupuzha originates in the Kottayam district of Kerala. It is a perennial river with total drainage area 1554 Sq.kms and the length is 121 kms. There are two water quality stations on this Basin, one on the main river Muvattupuzha at ***Ramamangalam*** and the other at ***Kalampur*** on its tributary called Kaliyar.

2.13.12 Meenachil: River Meenachil originates in Kottayam district of Kerala State. The total length of the river from its origin to Vembanad Lake, where it joins is about 78 kms. The drainage area is 1272 Sq.Kms. The only water quality station on this river is at ***Kidangoor,*** where water quality observation commenced from 02.06.1986.

2.13.13 Pamba: The Pamba, 176 km in length, is the third longest river in Kerala. It is formed by the confluence of the Pamba Aar, Kaki Aar, Arudhai Aar, Kakkad Aar and Kall Aar. The Pamba Aar rises in the Peermedu Plateau at an elevation of 1,670m. The Kaki Aar, which forms the major tributary of the Pamba River, is a much larger stream at the beginning than the main river. The Pamba River, after receiving the Kaki Aar, flows in a Westerly direction till the Arudhai Aar joins it. At Narayanamuzhi, it turns and follows a south-eastern direction until the Kakkad Aar joins it. Beyond the confluence, the river flows in a southerly direction up to Vadasserikkara where it is joined by the Kall Aar, which has its origin in the Valanjakkatti Malai. The catchment area of the river is 2,235 sq km. At Pandanad, the river bifurcates and one branch taking a western course. The Manimala joins the Pamba in its Neeretupuram branch. The river thereafter flows northwards and falls into the Vembanad Lake through several branches. The basin experiences good rainfall, moderate temperature and humid atmosphere. The south west and north east monsoon have great influence over the climatic condition of the basin. There is one H.O. site for each of Gauge, Discharge, Sedimentation and Water Quality.

2.13.14 Achankovil: River Achenkovil originates in the south of Devarmalai, in the Quilon District of Kerala. The river is formed by several streams originating from Pasukidamettu, Ramakkla Teri and Rishi Malai. It has a total length of 128 km. and drains an area of 1484 Sq. Km. The drainage area up to the Site is 810 Sq. Km. The only water quality station on this basin is located at ***Thumpamon,*** where Water Quality observation commenced from 15.10.1978.

2.13.15 Kallada: The Kallada River is formed by the three rivers i.e. Kulathupuzha, Chendurni and Kalthuruthy joining together near Parappar. The river has its origin in Papanasam range south of Kulathupuzha in Quilon district of Kerala State at an altitude of 900m above msl. The river has a length of 121 km and drains an area of 1,699 sq km before confluence with the Ashtamudilake. The basin experiences good rainfall and humid atmosphere throughout the year. The climate along the coastal region of this basin is generally hot with high humidity.

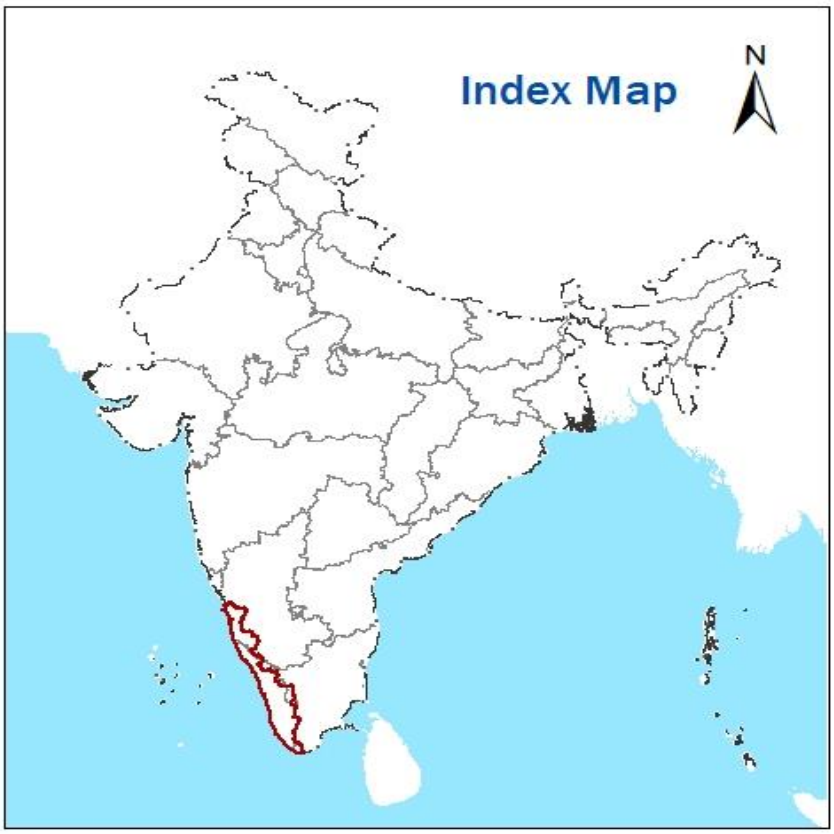
2.13.16 Vamanapuram: River Vamanapuram originates from Chemunji Motai in Kerala. Its total drainage area is 687 Sq.Kms and the length is 88 Kms. The only water quality station on this river is at ***Ayilam***.

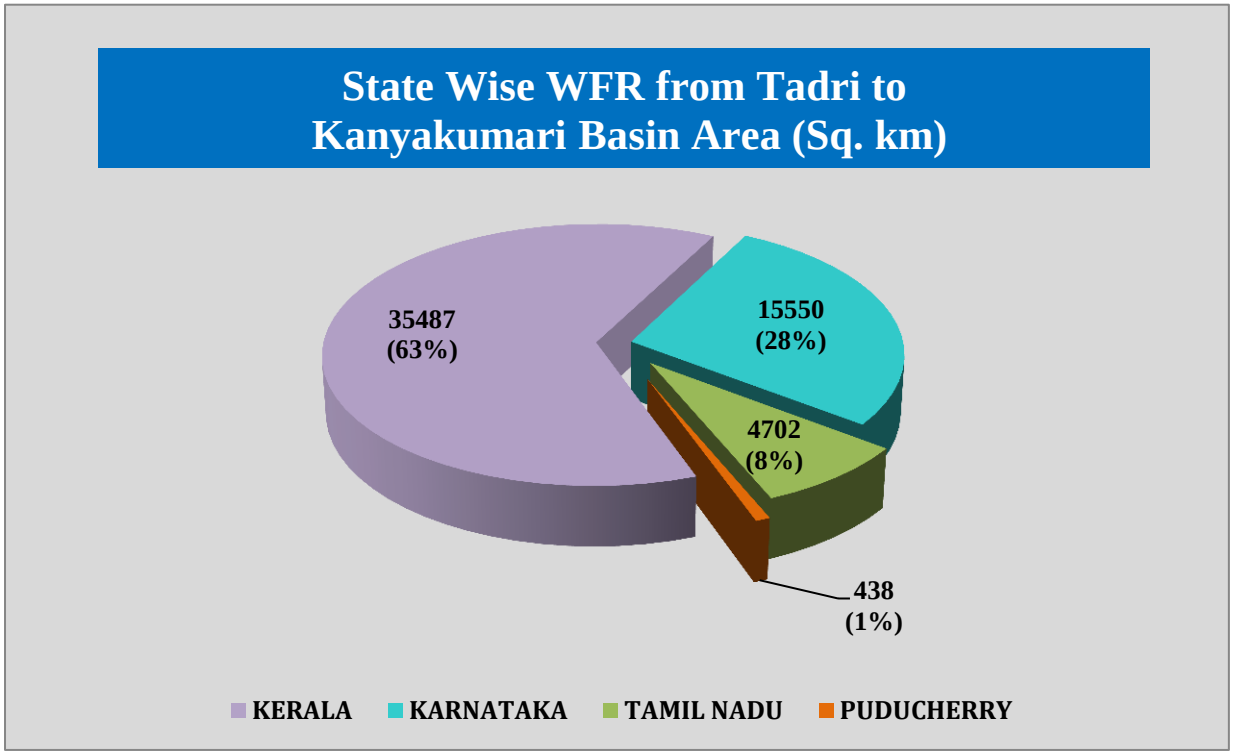
2.13.17Irrigation Projects: The Anjunem in the sub-basin of Mandovi, Kal in the sub-basin of Kal, Swarna Dam in the sub-basin of Swarna, Kattampally in the sub-basin of Valapatanam, Malampuzha Reservoir, Tirumurthi and Aliayar in the sub-basin of Bharathapuzha, Chalakudi River Diversion Scheme, Sholayar H.E.S and Peringilkuthu Left Bank Scheme in the sub-basin of Chalakudi, Periyarvalley Project, Edamalayar and Idukky Hydel Project in the sub-basin of Periyar, Pamba Hydel Project in the sub-basin of Pamba, Kalada Irrigation Project in the sub-basin of Kalada are the major projects in the catchment areas of the west flowing river basin.

2.13.18 Hydrological Observation Sites: There are 28 sites in the basin for recording observations on water quality, gauge and discharge and sedementation. Sediment observations are made at 18 of these stations (as per 2015-16 data).

2.13.19 Water Quality: Temporal trends of water quality parameters viz. pH,BOD,DO, Total hardness are given below for two sites of the basin (Fig 2.13.1 to Fig 2.13.11).


WEST FLOWING RIVERS BASIN
TADRI TO KANYAKUMARI
Kalinadi and others
Tadri
Sharavati
Linganamakhi
HALADI
Haladi and others
Mani Dam (Varahi)
AVERSHE
Sita
YENNEHOLE
KARNATAKA
BANTWAL
ADDOOR
Netravati and others
BANGALORE
ERINJIPUZHA
Chandragiri
Kuppam
PERUMANNU
Kuttiyadi
KUTTYADI
KERALA
KUNIYIL
Chaliyar
KARATHODU
COIMBATORE
Lakshdweep
PULAMANTHOLE
Chaliyar and others
Malampuzha
KUMBIDI
PUDUR
Gayirri
AMBREPLAYAM
Peechi
Aliyar
MANKARA
Kurumali
Parambikulam
ARABIAN SEA
TAMILNADU
Chalakudi
NEELESWARAM
ARANGALY
Periyar
Periyar Valley Barrage
COCHIN
KALAMPUR
RAMAMANGALAM
Idukki
KIDANGOOR
VANDIPERIYAR
Periyar and others
Mulla Periyar
KALLOOPPARA
Kakki Dam
Pamba Barrage
THUMPAMON
MALAKKARA
Kallada
PATTAZHY
Kallada Dam
AYILAM
TRIVANDRUM
KUZHITHURAI
ASHRAMAM
Legend
State Capital
GDQ
GDSQ
Dam/ Weir/ Barrage
CE / CO / DO
Divisional Office
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
74°0'0"E
75°0'0"E
76°0'0"E
77°0'0"E
78°0'0"E
14°0'0"N
13°0'0"N
12°0'0"N
11°0'0"N
10°0'0"N
9°0'0"N


Index Map
N


State Wise WFR from Tadri to Kanyakumari Basin Area (Sq. km)
35487 (63%)
15550 (28%)
4702 (8%)
438 (1%)
KERALA
KARNATAKA
TAMIL NADU
PUDUCHERRY

WFR from Tadri to Kanyakumari Flow Line Diagram

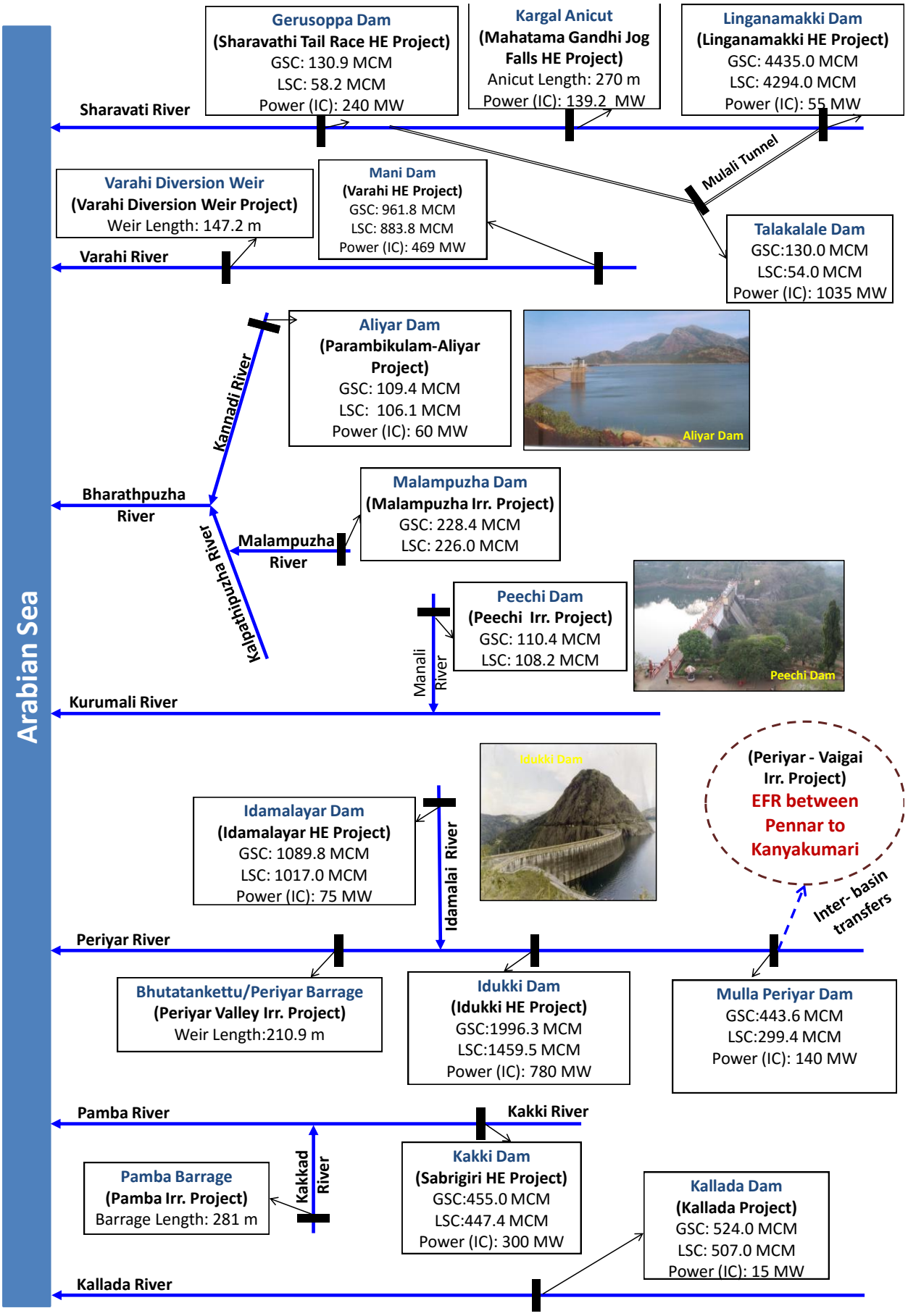
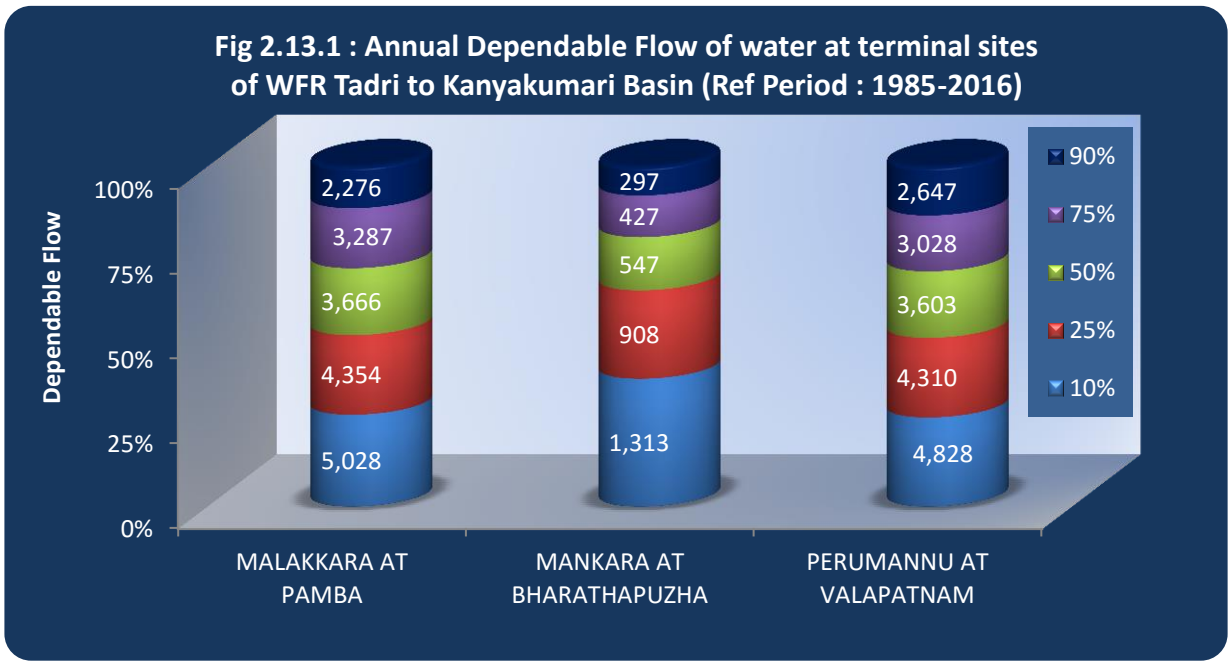


Table 2.13.1: Annual Dependable Flow of Water at Terminal Sites of WFR from Tadri to Kanyakumari Basin

Sl. No.	River @ Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	PAMBA AT MALAKKARA	6/1985 to 5/2016	5027.82	4354.50	3665.65	3286.67	2275.78
2	BHARATHAPUZHA AT MANKARA		1312.95	907.80	546.52	427.22	296.71
3	VALAPATNAM AT PERUMANNU		4828.22	4310.45	3603.14	3027.91	2647.06

Source: SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore



2.13.20 Land Use Statistics: Table 2.13.2 to Table 2.13.4 presentbelow the land use pattern, gross irrigated area and net irrigated area for WFR tadri to Kanyakumari basin as compared to all basins(Region-III).

TABLE 2.13.2: LAND UTILISATION PATTERN OF WFR TADRI TO KANYAKUMARI AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
WFR tadri to kanyakumari	54,246.60	15,480.95	8,468.87	3,527.82	2,285.57	24,483.38	5,941.95	30,425.33
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.13.3: GROSS AREA IRRIGATED BY SOURCES PATTERN OF WFR TADRI TO KANYAKUMARI AND ALL RIVER BASINS(REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
WFR tadri to kanyakumari	401.34	0.11	401.45	349.24	549.33	1,102.37	1,651.70	330.83	2,733.22
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.13.4: NET AREA IRRIGATED BY SOURCES PATTERN OF WFR TADRI TO KANYAKUMARI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
WFR tadri to kanyakumari	1,178.21	7.81	1,186.01	763.80	833.17	2,375.66	3,208.84	1,238.59	6,397.24
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.14 MAHI BASIN

Location: The Mahi river is one of the major west flowing inter-state river of India,draining into the Gulf of Khambat. The basin is bounded on the North and the North - West by Aravalli hills, on the East by the ridge separating it from the Chambal Basin, on the South by the Vindhyas and on the West by the gulf of Khambat. The river Mahi originates on the Northern slope of Vindhyas range near the village of Sardarpur in the Dhar District of Madhya Pradesh at an elevation of 500m above msl. Its length is 583 kms and it traverses through states of Madhya Pradesh, Rajasthan and Gujarat. The river Mahi drains an area of 34,842 sq km. It lies between 72^0 21' to 75^0 59' east longitudes and 21^0 46' to 24^0 30' north latitude.

Initially the river flows Northwards through Dhar and Jhabua districts of M.P. and then turns left and passes through the Ratlam district of M.P., then turning to North - West, it enters the Banswara district of Rajasthan and flows in South-West directions and thereafter enters the Panchmahal district of Gujarat state. Then the river continues to flow in the same direction through Kheda district of Gujarat and finally falls into Gulf of Khambat in Arabian Sea. The Mahi Bajaj Sagar, Kadana Reservoir, Wanakbori Weir, Panam, Bhadar, Jakham and Somkamlamba are the major projects in the catchment areas of the Mahi sub-basin.

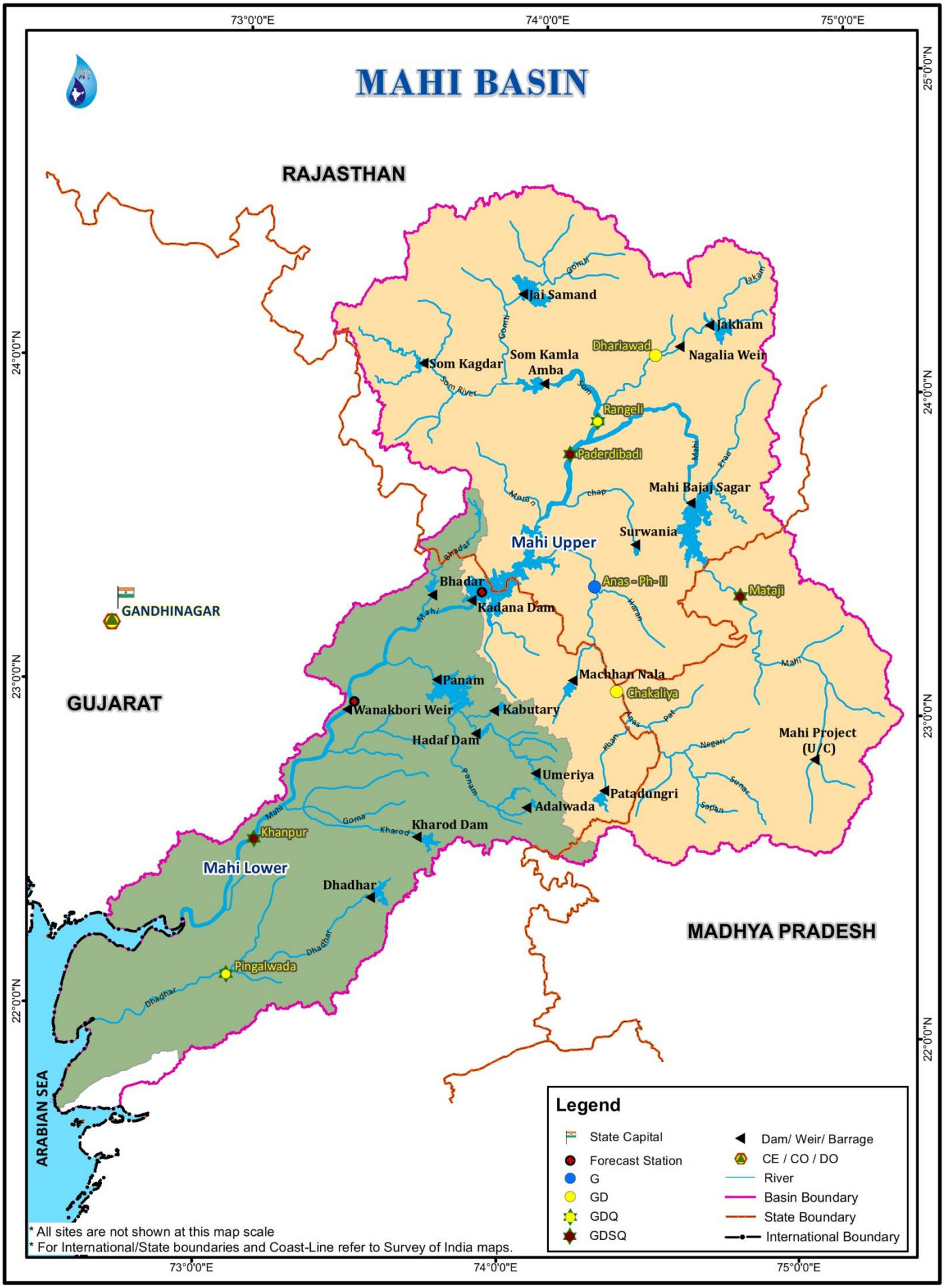
The basin contains two climatic regions, the northern part of the basin comprises sub tropical wet climate (generally basin area occupied by Rajasthan). The major part of the basin comprises tropical wet climate, caused mainly due to existence of Vindhyas and the Western Ghats.The temperature of the basin varies from 3^0 to 47^0C.The average rainfall in the Mahi basin is 785 mm.

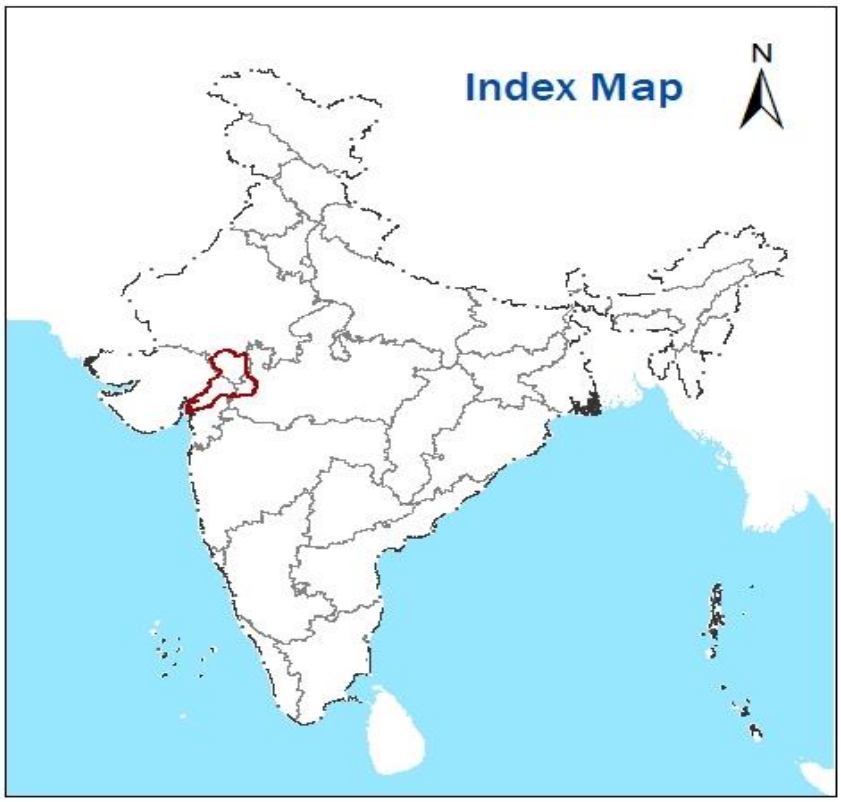
2.14.1 Irrigation Projects: Mahi Irrigation Project, Mahi Bajaj Sagar, Panam Dam, Jakham Dam are major irrigation projects in the basin.

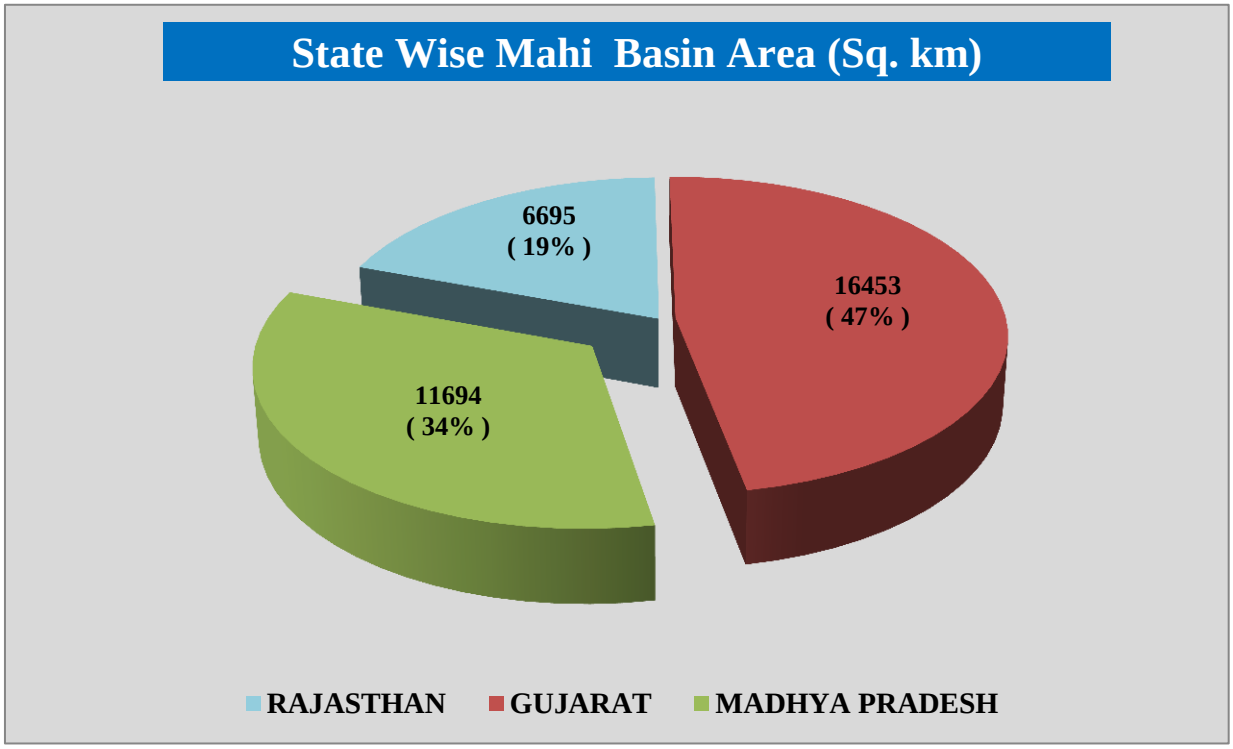
2.14.2 Hydrological Observation (H.O.) Sites: There are total 12H.O. sites in the basin, out of which 6 sites for measuring Gauge only (G), 2sites for Gauge & Discharge(GD), onesite for Gauge, Discharge, Water Quality(GDQ) and 3 sites for Gauge, Discharge, Sedimentation &Water Quality(GDSQ).

2.14.3 Peak Water Level: Khanpur, Mataji and Paderdibadi are the oldest sites out of the 6 sites reported in the basin, which were established in late 1970 to make the observations of Gauge/Discharge, Sediment and Water Quality. Mataji recorded the highest peak water level at 307 metre dated 04.10.1988 during the reference period 2015-16.

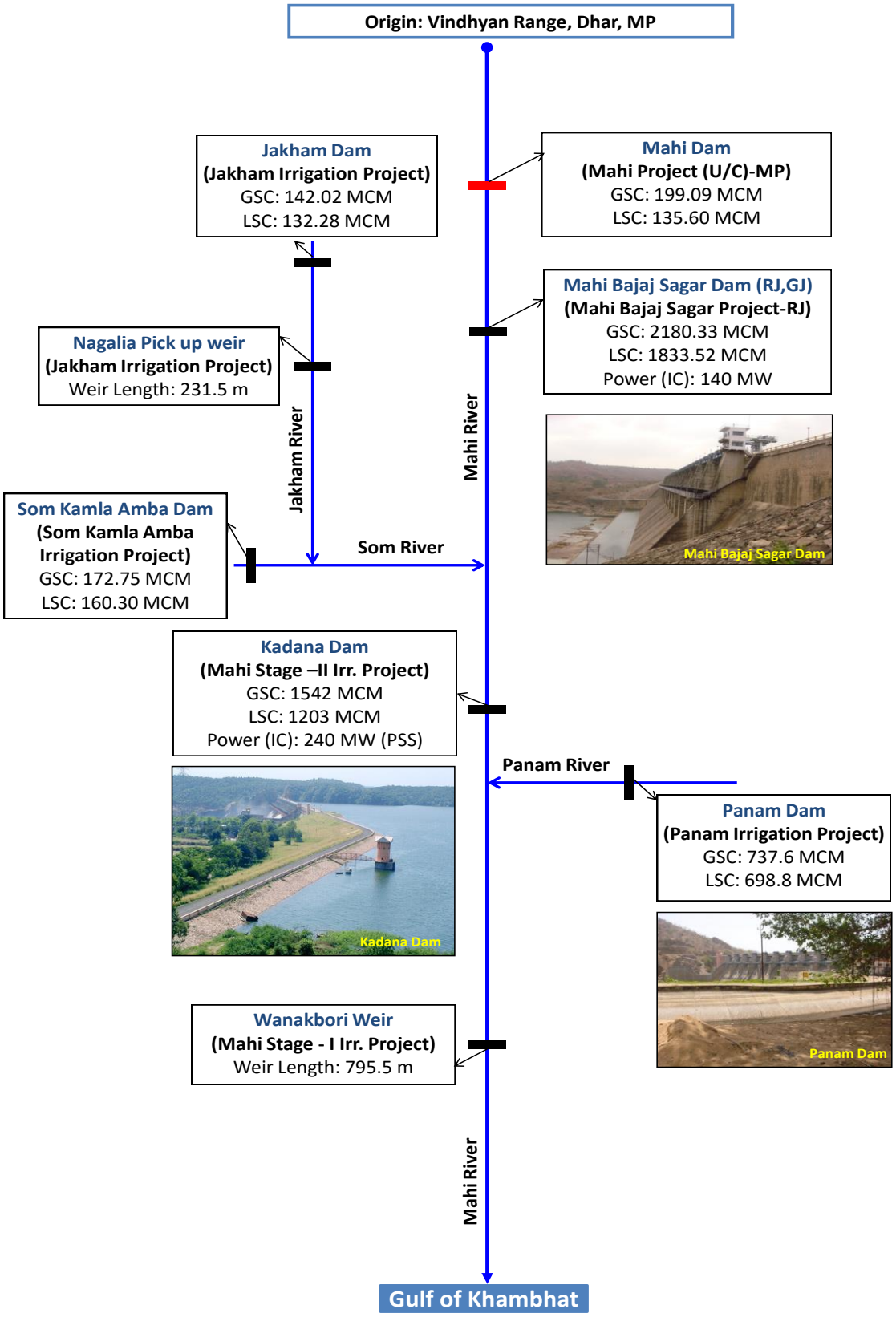
2.14.4 Water Quality: Temporal trends of water quality parameters viz. pH,BOD,DO, Total hardness are given below for three sites of Mahi basin (Fig 2.14.1 to Fig 2.14.12).


MAHI BASIN
RAJASTHAN
GUJARAT
MADHYA PRADESH
GANDHINAGAR
ARABIAN SEA
Jai Samand
Jakham
Dhariawad
Nagalia Weir
Som Kagdar
Som Kamla Amba
Rangeli
Paderdibadi
Mahi Bajaj Sagar
Surwania
Mahi Upper
Bhadar
Kadana Dam
Anas - Ph- II
Mataji
Panam
Wanakbori Weir
Kabutary
Hadaf Dam
Machhan Nala
Chakaliya
Mahi Project (U/C)
Umeriya
Patadungri
Adalwada
Kharod Dam
Khanpur
Mahi Lower
Dhadhar
Pingalwada
73°0'0"E
74°0'0"E
75°0'0"E
25°0'0"N
24°0'0"N
23°0'0"N
22°0'0"N
Legend
State Capital
Forecast Station
G
GD
GDQ
GDSQ
Dam/ Weir/ Barrage
CE / CO / DO
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.


Index Map
N


State Wise Mahi Basin Area (Sq. km)
6695
(19%)
16453
(47%)
11694
(34%)
RAJASTHAN
GUJARAT
MADHYA PRADESH

Mahi River Flow Line Diagram



Basin: Mahi (Water Quality Parameter : pH)

Fig 2.14.1 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for pH at Mahi Basin

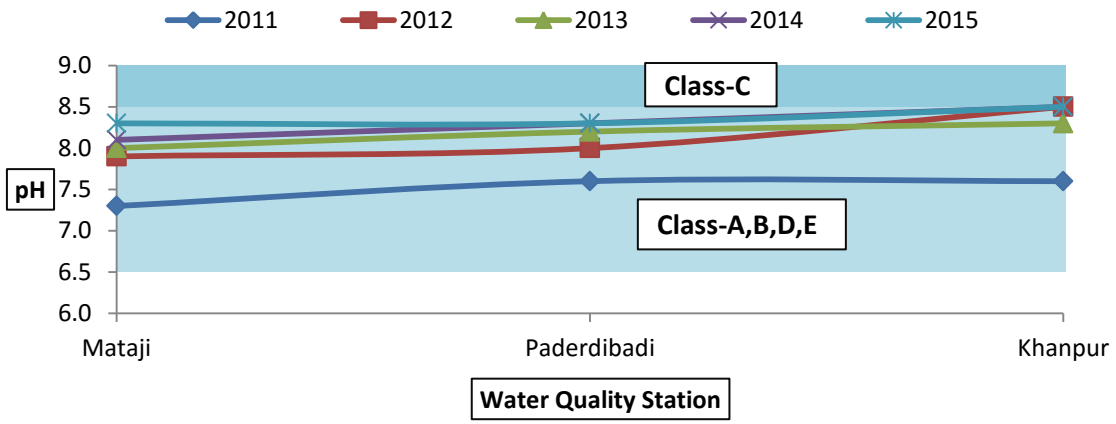


Fig 2.14.2 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for pH at Mahi Basin

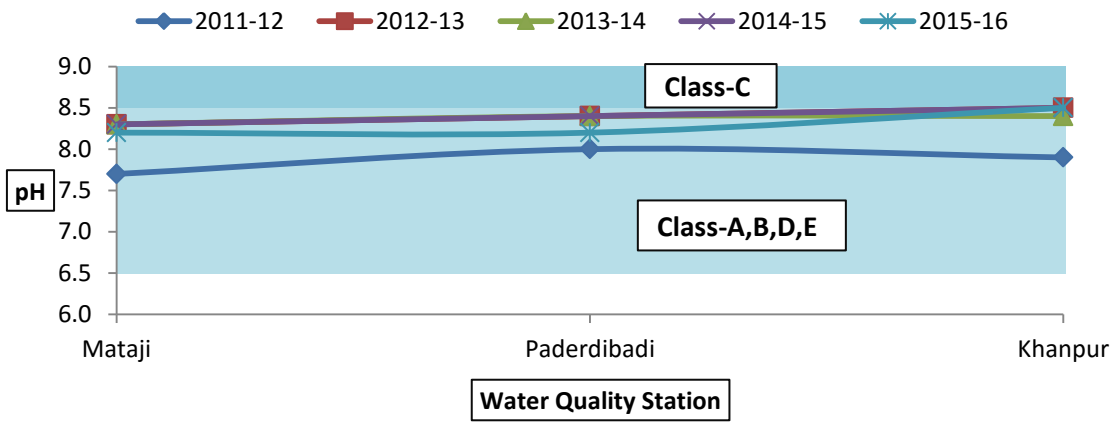
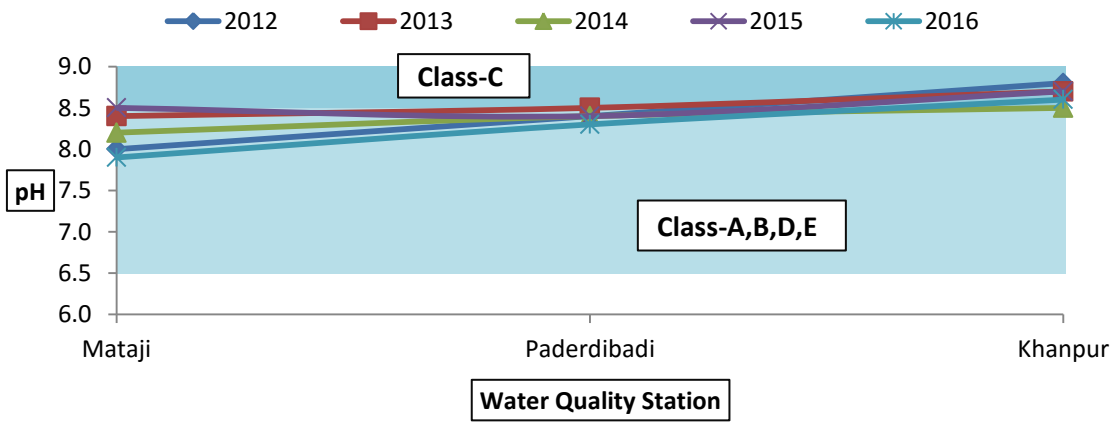


Fig 2.14.3 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for pH at Mahi Basin



Basin: Mahi (Water Quality Parameter : BOD)

Fig 2.14.4 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for BOD at Mahi Basin

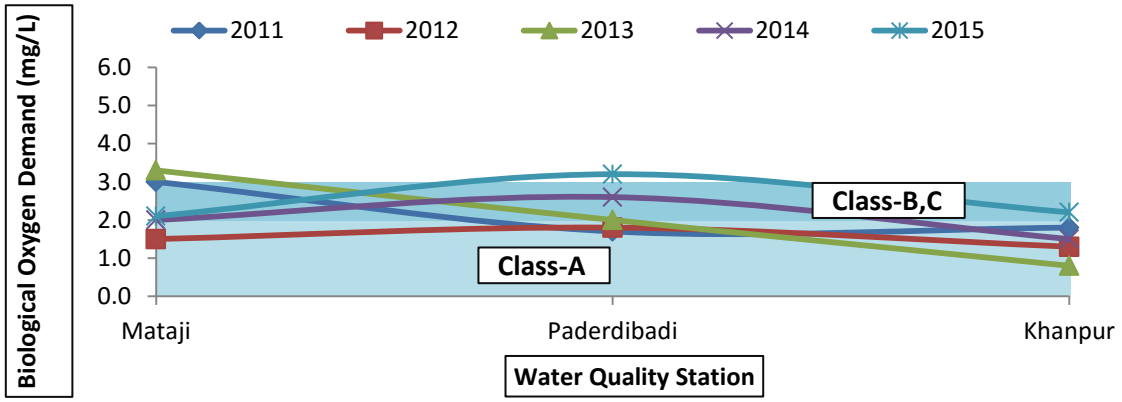


Fig 2.14.5 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for BOD at Mahi Basin

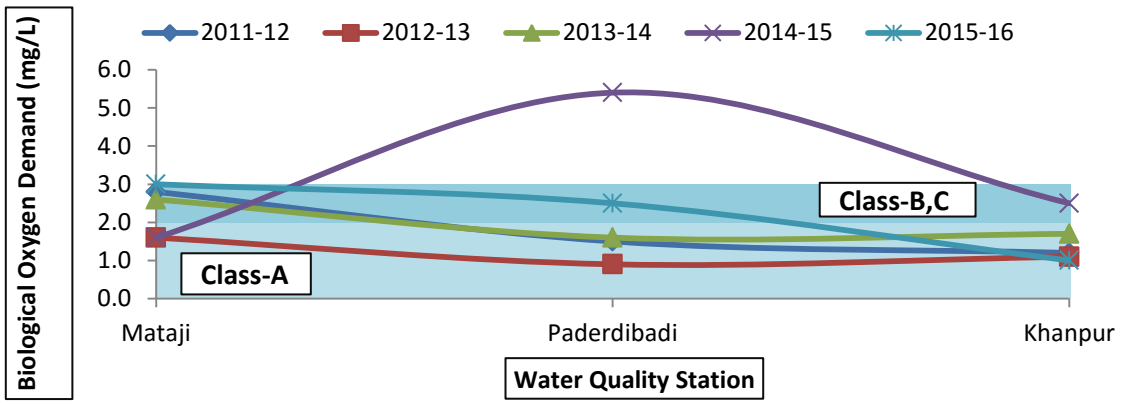
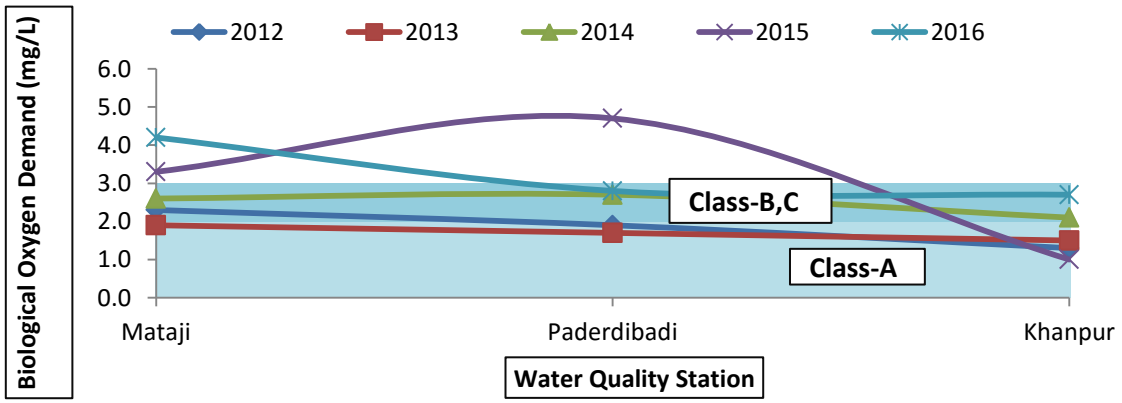


Fig 2.14.6 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for BOD at Mahi Basin



Basin: Mahi (Water Quality Parameter : Dissolved Oxygen)

Fig 2.14.7 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for DO at Mahi Basin

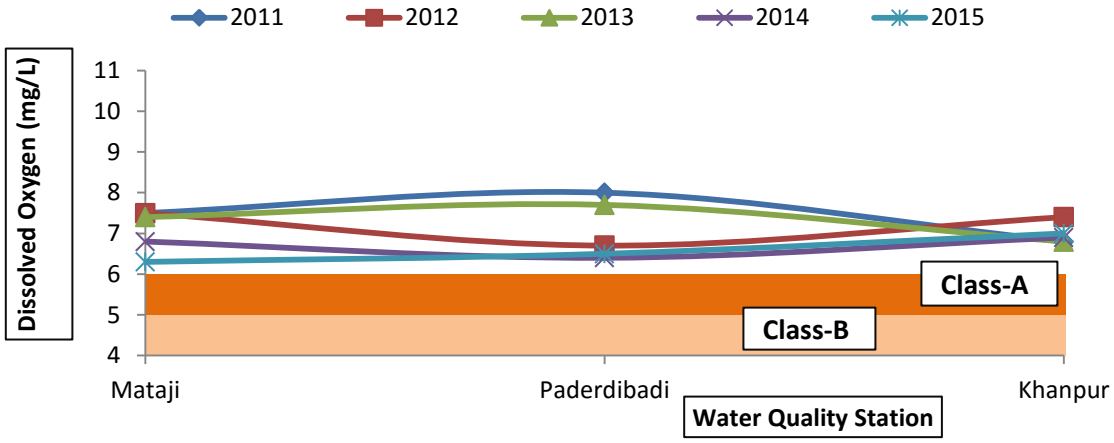


Fig 2.14.8 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for DO at Mahi Basin

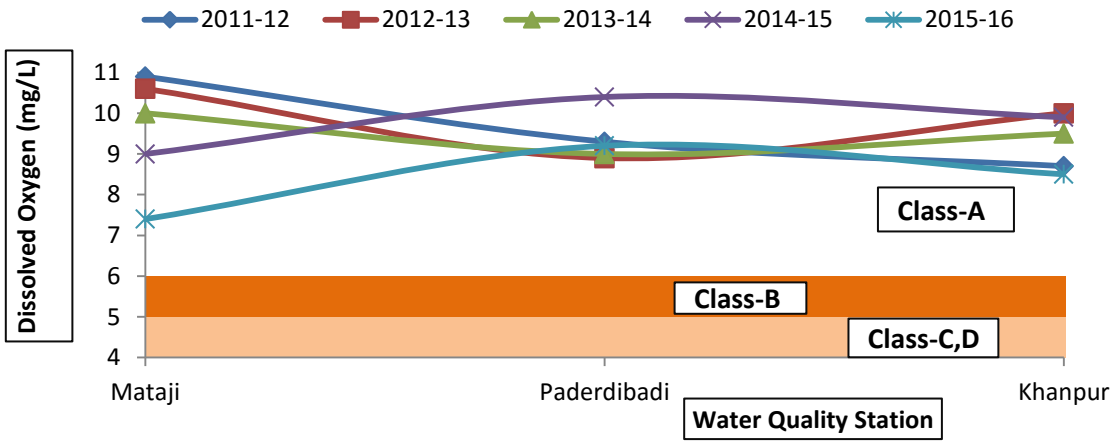
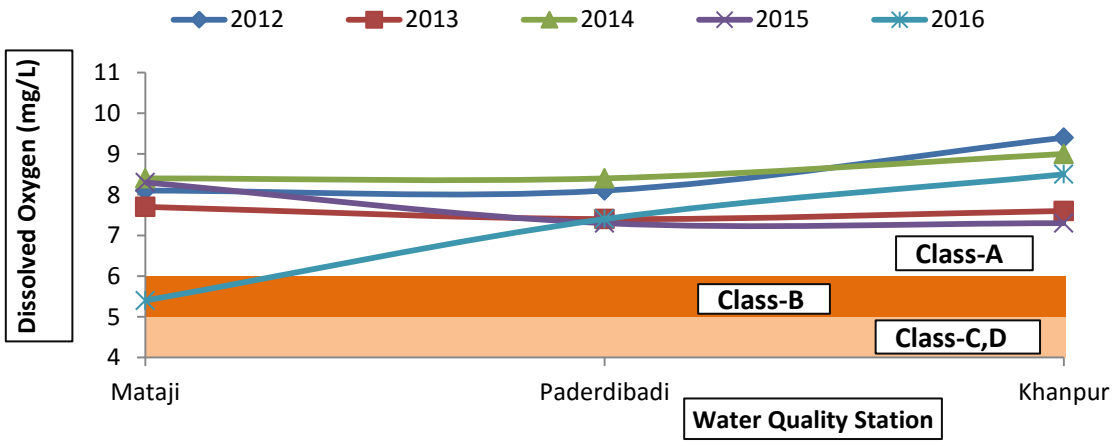


Fig 2.14.9 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for DO at Mahi Basin



Basin: Mahi (Water Quality Parameter : Total Hardness)

Fig 2.14.10 : Seasonal 5 years trend (2011 to 2015) during Monsoon(Jun-Oct) for Total Hardness at Mahi Basin

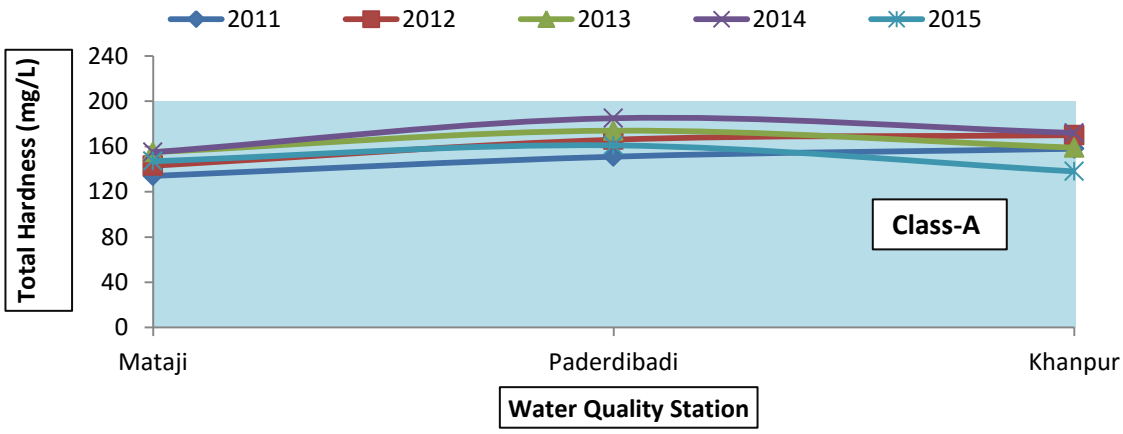


Fig 2.14.11 : Seasonal 5 years trend (2011 to 2015) during Winter(Nov-Feb) for Total Hardness at Mahi Basin

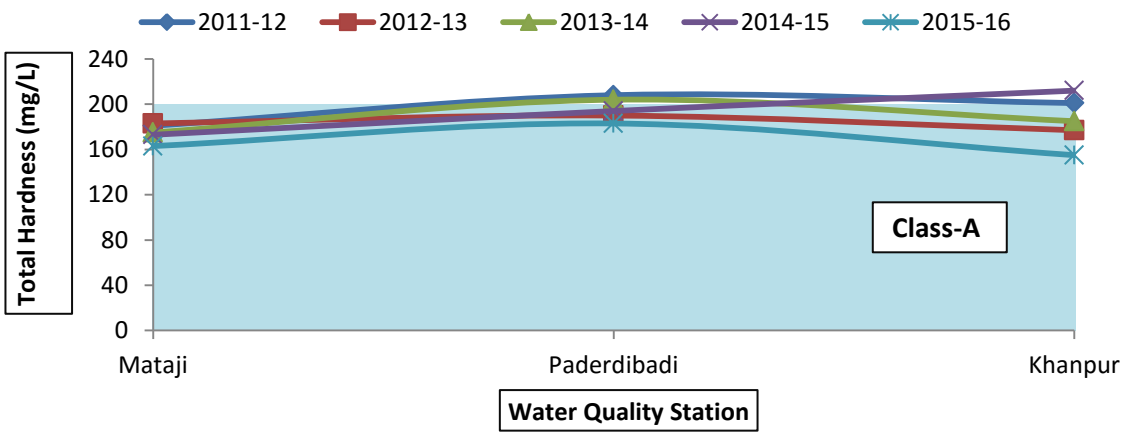


Fig 2.14.12 : Seasonal 5 years trend (2012 to 2016) during Summer(Mar-May) for Total Hardness at Mahi Basin

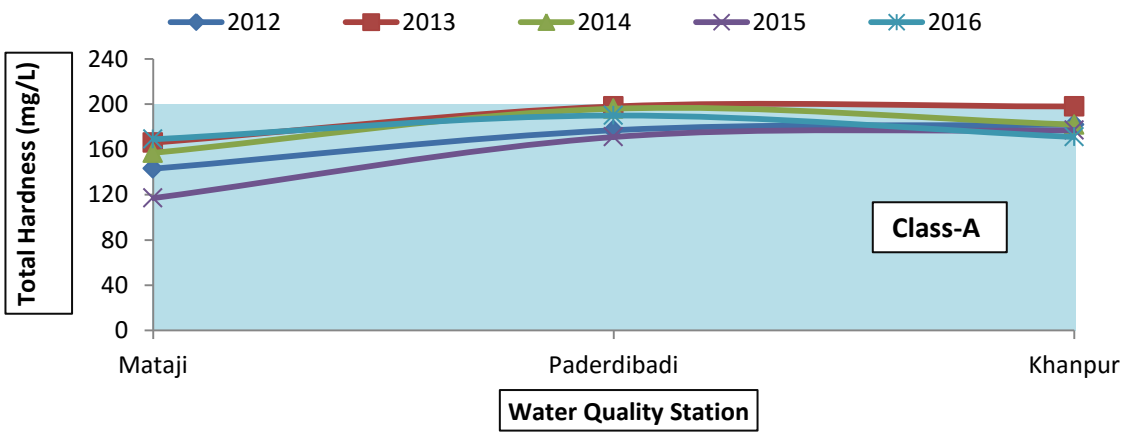
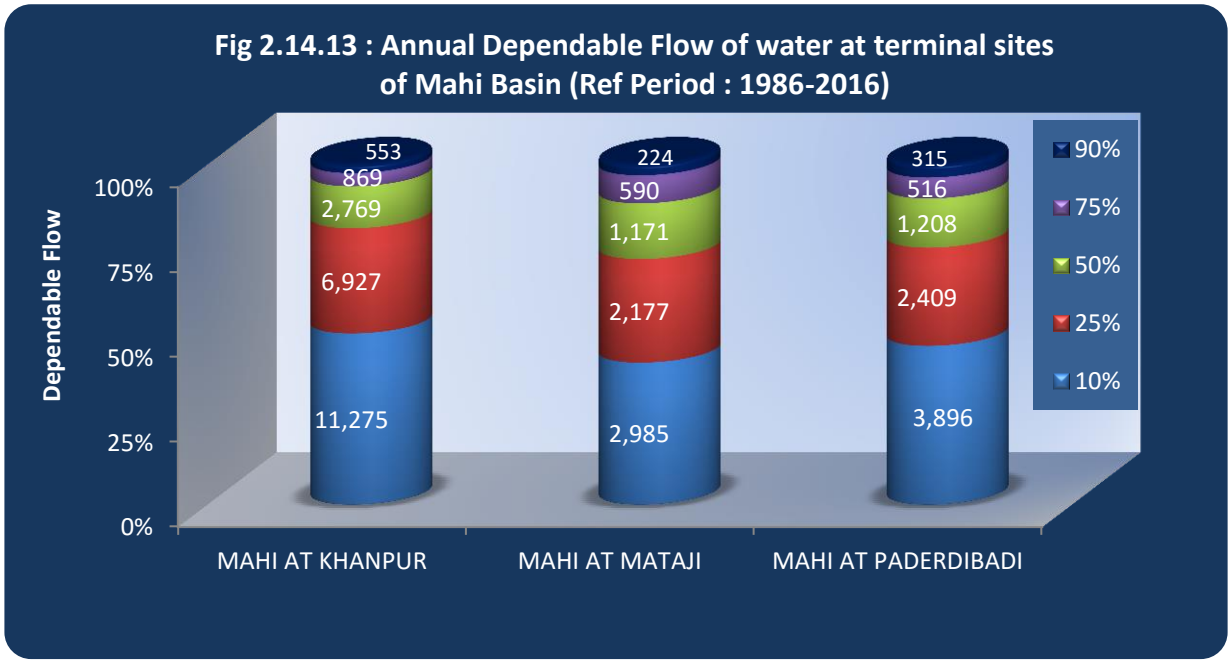


Table 2.14.1: Annual Dependable Flow Of Water at Terminal Sites Of Mahi Basin

Sl. No.	River @ SiteName	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	MAHI AT KHANPUR	6/1986 to 5/2016	11275.28	6927.00	2769.44	868.64	553.48
2	MAHI AT MATAJI		2984.53	2177.46	1170.62	589.59	223.89
3	MAHI AT PADERDIBADI		3895.65	2409.41	1208.27	515.73	314.66



2.14.5 Land Use Statistics: Table 2.14.2 to Table 2.14.4 present below the land use pattern, gross irrigated area and net irrigated area for Mahi basin as compared to all basins(Region-III).

TABLE 2.14.2: LAND UTILISATION PATTERN OF MAHI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Mahi	24,214.69	4,811.08	5,217.89	2,793.74	1,183.57	10,208.41	4,919.18	15,127.59
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.14.3: GROSS AREA IRRIGATED BY SOURCES OF MAHI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Mahi	1,067.19	-	1,067.19	310.48	1,030.39	2,006.68	3,037.07	611.30	5,026.04
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.14.4: NET AREA IRRIGATED BY SOURCES OF MAHI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Mahi	1,053.34	-	1,053.34	309.64	1,012.09	1,959.78	2,971.87	604.06	4,938.92
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

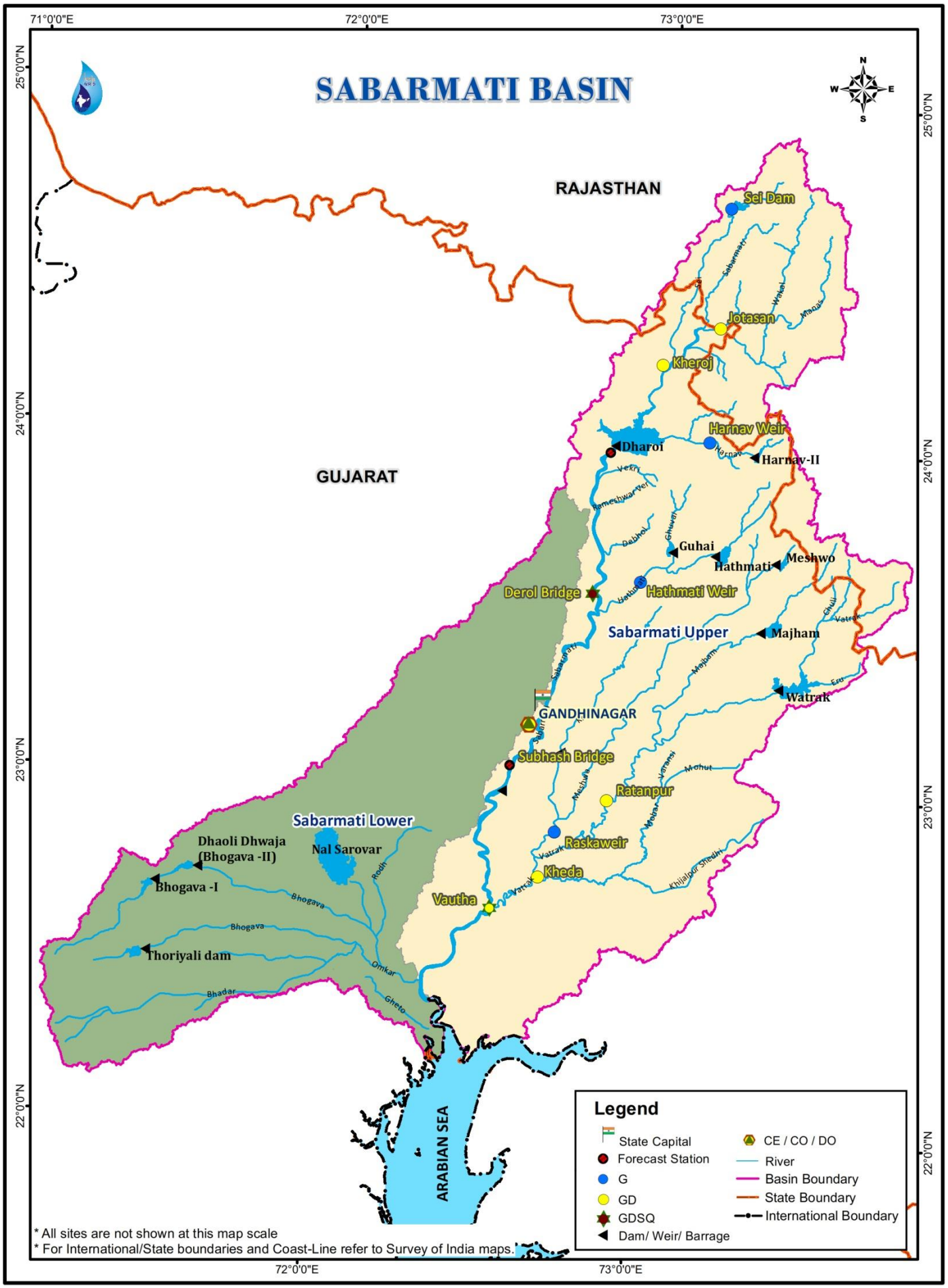
Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

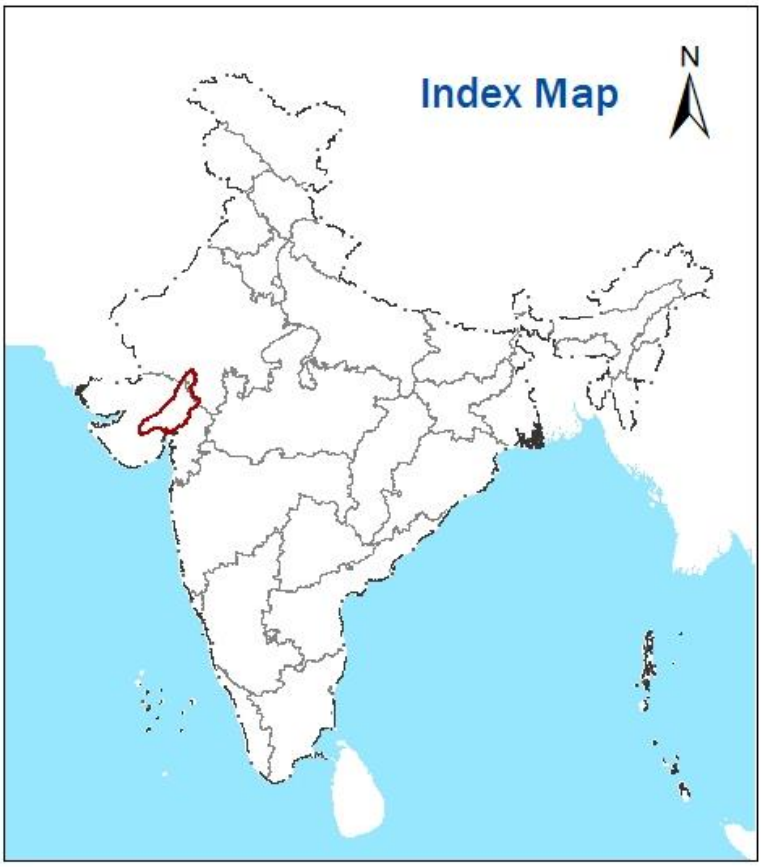
2.15 SABARMATI BASIN

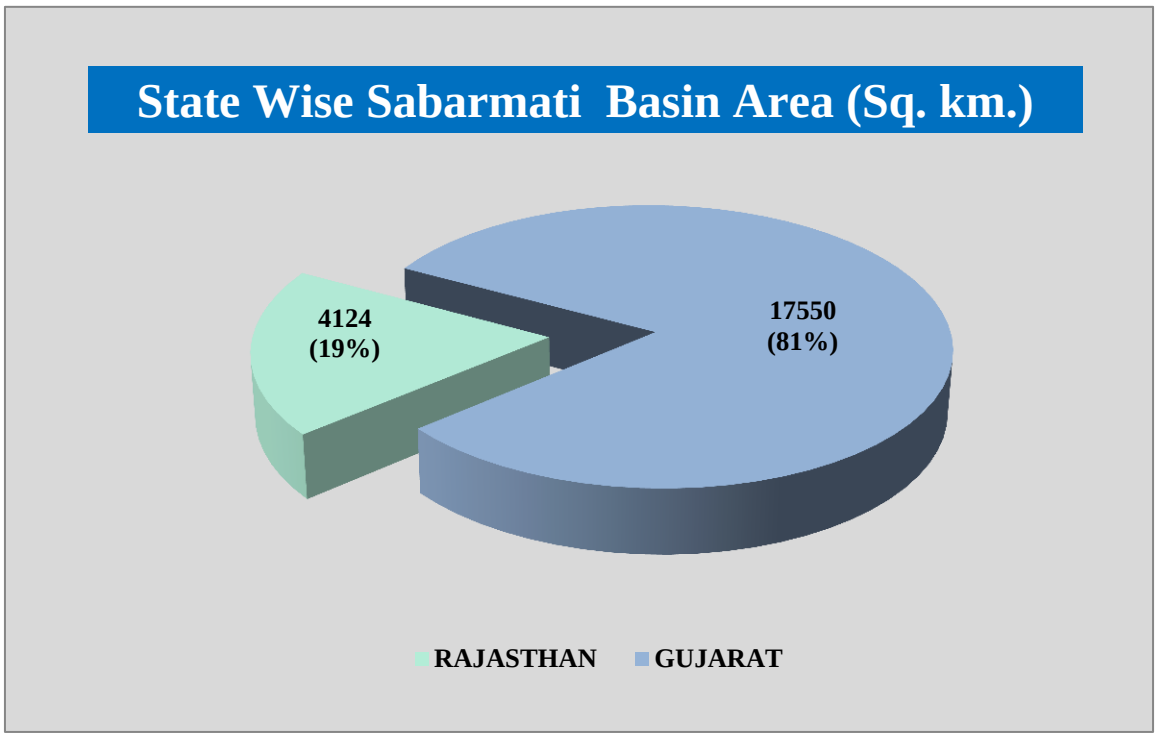
Location: The Sabarmati River is one of the major West flowing inter-state rivers in India, draining into the Gulf of Khambat. The basin is bounded by Aravalli hills in the North and North-east. The ridge separating it from basins of minor streams and draining into Rann of Kutchh and Gulf of Khambat in West and by Gulf of Khambat in South. It is triangular in shape with the main river as the base and the source of the Watrak as the apex point. It originates in the Aravalli hills in the Rajasthan State at an elevation of 762m above msl. The river Sabarmati drains an area of 21,674 sq km with a total length of 371 kms. It lies between 70^0 58' to 73^0 51' east longitudes and 22^0 15' to 24^0 47' north latitudes.
The Sabarmati River, with its origin in Rajasthan, flows generally in south west direction. It enters the Gujarat State and passes through the plains and continues to flow in the same direction and joins the Gulf of Khambat in the Arabian Sea. The Dharoi Dam, Watrak, Meshwo, Moti fatewati and Hathmati are the major projects in the catchment areas of Sabarmati sub-basin. The basin contains two climatic regions, the northern part of the basin comprises sub tropical wet climate (generally basin area occupied by Gujarat). The major part of the basin comprises tropical wet climate, caused mainly due to existence of Aravalli and the Western Ghats.The temperature of the basin varies from 0^0 to 42^0C. The average rainfall in the Sabarmati basin is about 787.5 mm.

2.15.1 Irrigation Projects: Sabarmati irrigation project (Dharoi Dam),Watrak irrigation project, Moti Fatewadi are major projects in the basin.

2.15.2 Hydrological Observation(H.O.) Sites: There are 13 H.O. sites in total in the basin, out of which 7 sites for measuring Gauge(G) only, 5sites for Gauge &Discharge(GD), one site for Gauge, Discharge and Sediment (GDS).


SABARMATI BASIN
RAJASTHAN
GUJARAT
ARABIAN SEA
Sei Dam
Jotasan
Kheroj
Harnav Weir
Harnav-II
Dharoi
Guhai
Hathmati
Meshwo
Derol Bridge
Hathmati Weir
Sabarmati Upper
Majham
Watrak
GANDHINAGAR
Subhash Bridge
Ratanpur
Raskaweir
Kheda
Vautha
Sabarmati Lower
Nal Sarovar
Dhaoli Dhwaja (Bhogava -II)
Bhogava -I
Thoriyali dam
Legend
State Capital
Forecast Station
G
GD
GDSQ
Dam/ Weir/ Barrage
CE / CO / DO
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.
71°0'0"E
72°0'0"E
73°0'0"E
25°0'0"N
24°0'0"N
23°0'0"N
22°0'0"N


Index Map
N


State Wise Sabarmati Basin Area (Sq. km.)
4124
(19%)
17550
(81%)
RAJASTHAN
GUJARAT

Sabarmati River Flow Line Diagram

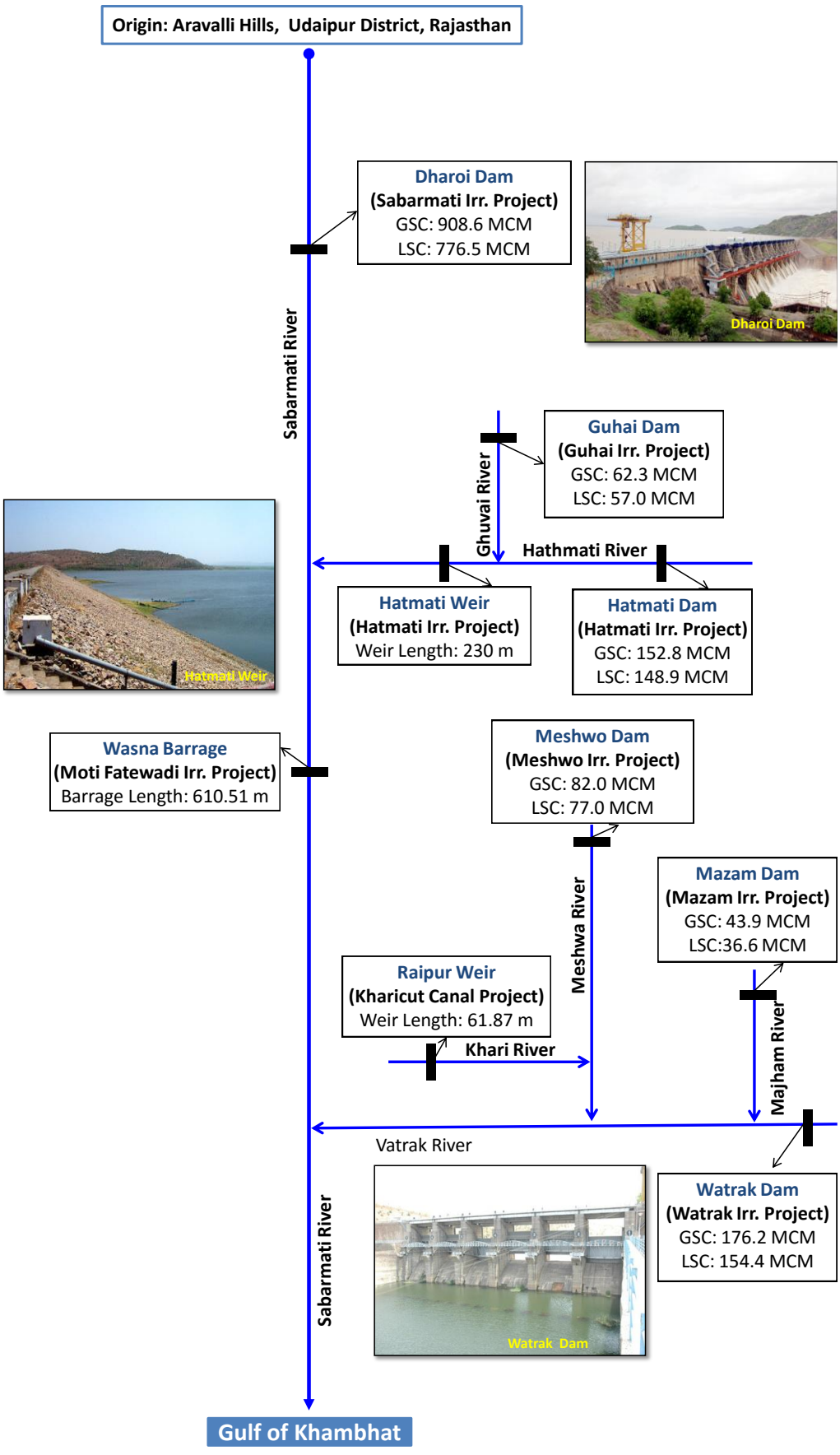
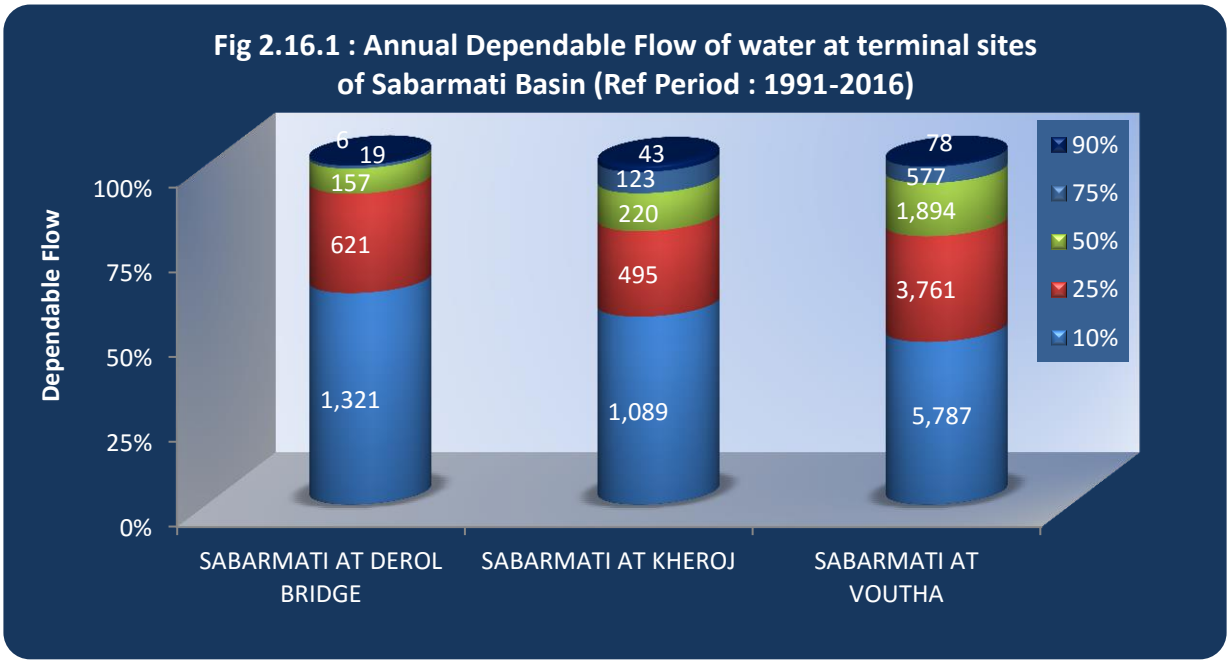


Table 2.15.1: Annual Dependable Flow of Water at Terminal Sites Of Sabarmati Basin

Sl. No.	River @ Site Name	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	SABARMATI AT DEROL BRIDGE	9/1991 to 2/2016	1321.43	620.67	157.31	18.69	6.10
2	SABARMATI AT KHEROJ	6/1992 to 11/2015	1089.47	495.21	220.02	123.08	42.88
3	SABARMATI AT VOUTHA	8/1999 to 5/2016	5787.24	3761.15	1894.17	576.58	77.92



2.15.3 Land Use Statistics: Table 2.15.1 to Table 2.15.3 present below the land use pattern, gross irrigated area and net irrigated area for Sabarmatibasin as compared to all basins(Region-III).

TABLE 2.15.1: LAND UTILISATION PATTERN OF SABARMATI AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
Sabarmati	4,675.93	1,263.74	1,515.43	685.59	279.27	931.89	411.01	1,342.89
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.15.2: GROSS AREA IRRIGATED BY SOURCES OF SABARMATI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Sabarmati	25.30	-	25.30	36.41	51.26	266.05	317.31	5.11	384.13
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics& Statistics, M/o. Agriculture

TABLE 2.15.3: NET AREA IRRIGATED BY SOURCES OF SABARMATI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
Sabarmati	25.23	-	25.23	36.32	47.31	254.12	301.43	4.86	367.84
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.16 WEST FLOWING RIVERS OF KUTCH AND SAURASHTRA INCLUDING LUNI

Location: The basin extends over large areas in rajasthan and Gujarat and covers whole of Diu having an area of 321,851 Sq. km with maximum length and width of 865 km and 445 km. It lies between 67^0 52' to 75^0 19' east longitudes and 20^0 53' to 26^0 57' north latitudes. The basin is bouded by Aravalli range and Gujarat plains on the east, by Rajasthan desert on north, and by the Arabian Sea on the south and the west.

Luni is the major river system of the basin. Other independent rivers of the basin are the Shetrunji, the Bhadar, the Machhu, the Rupen, the Saraswati and the Banas.

The major part of the basin is covered with agriculture accounting to 65.06% of the total area and only 5.25% of the basin is covered by water bodies. Brief bescriptions of the rivers are given below.

2.16.1 Luni Basin: The Luni is the only significant river basin in Western Rajasthan which forms the bulk of arid zone. Luni originates from Western slopes of the Aravalli ranges at an elevation of 772m above msl near Ajmer flowing in South West direction and traversing a course of 511 km in Rajasthan before it finally flows into the Rann of Kutchh. Its total catchment 32879 sq km area falls in Rajasthan. Luni basin is situated in between 24^0 11' to 26^0 43' North latitude and 70^0 37' to 74^0 39' East longitude approximately. The peculiarity of this river is that it tends to increase its width rather than deepening the bed because the banks are of soils which are easily erodable whereas beds are of sand. The floods develop and disappear so rapidly that they have no time to scour the bed. The Aravalli ranges forms its East boundary whereas main course of river in Barmer district itself forms North boundary and mostly Banas and initial reach of Chambal River form its Southern boundary. Luni receives all the main tributaries on its left bank except one i.e. Jojari (Mithri) on the right bank. Luni receives ten tributaries namely Lolari, Guhiya, Bandi (Hemawas), Sukri (Hemawas), Sukari, Mithri, Jawai, Khari Bandi and Sugi. Hence the drainage on the left bank of Luni is, therefore, more extensive than on Right Bank. The Luni drains an area of 32,879 sq Km in Rajasthan State only. The rainfall in the basin is erratic and its distribution is uneven in the catchment. The temperature of the basin ranges from 5^0 to 46^0C.There are 2 sites for Gauge and Discharge.

2.16.2 Banas Basin: The river Banas originates from Aravalli hills and descends in a South-Western direction through Rajasthan state and travels through Banaskantha and Mehsana district of Gujarat before it drains into little Rann of Kutchh. The Banas basin is the Northern basin and is situated between 23^0 30'& 24^0 55' north latitudes and 71^0 15' to 73^0 15' east longitudes approximately. Saraswati and Luni basins form the Southern and Northern boundaries of this basin. The Aravalli hills form its eastern extremity. The Banas drains an area of 8,674 sq km out of which nearly 37.69% lies in Rajasthan state and remaining 62.31% falls in Gujarat state. The Banas River rises near Pindwara of Sirohi district of Rajasthan at an elevation of 372.51m above msl. Little Rann of Kutchh is the outfall of Banas river. Sipu is the only right bank tributary of Banas River which drains into the main channel. There are 6 tributaries on the left bank of Banas River namely the Batria, the Sukli, the Sewaran, the Suket, the Balaram and the Khari which drain into the main channel. Hence the draining system on the left bank of the Banas River is more extensive as compared to the right bank area. The Sipu and the Khari are the two important right and left bank tributaries which together drain nearly 37% of the total catchment area of Banas. The Sipu Dam, Swarupgunj and Dantiwada Dam are the major projects in the catchment areas of Banas sub-basin.There are 4 sites for

Gauge only(G), 1site for Gauge & Discharge (GD), 2sites for Gauge, Discharge & Water Quality(GDQ) and 1 for Gauge, Discharge, Sedimentation &Water Quality(GDSQ).

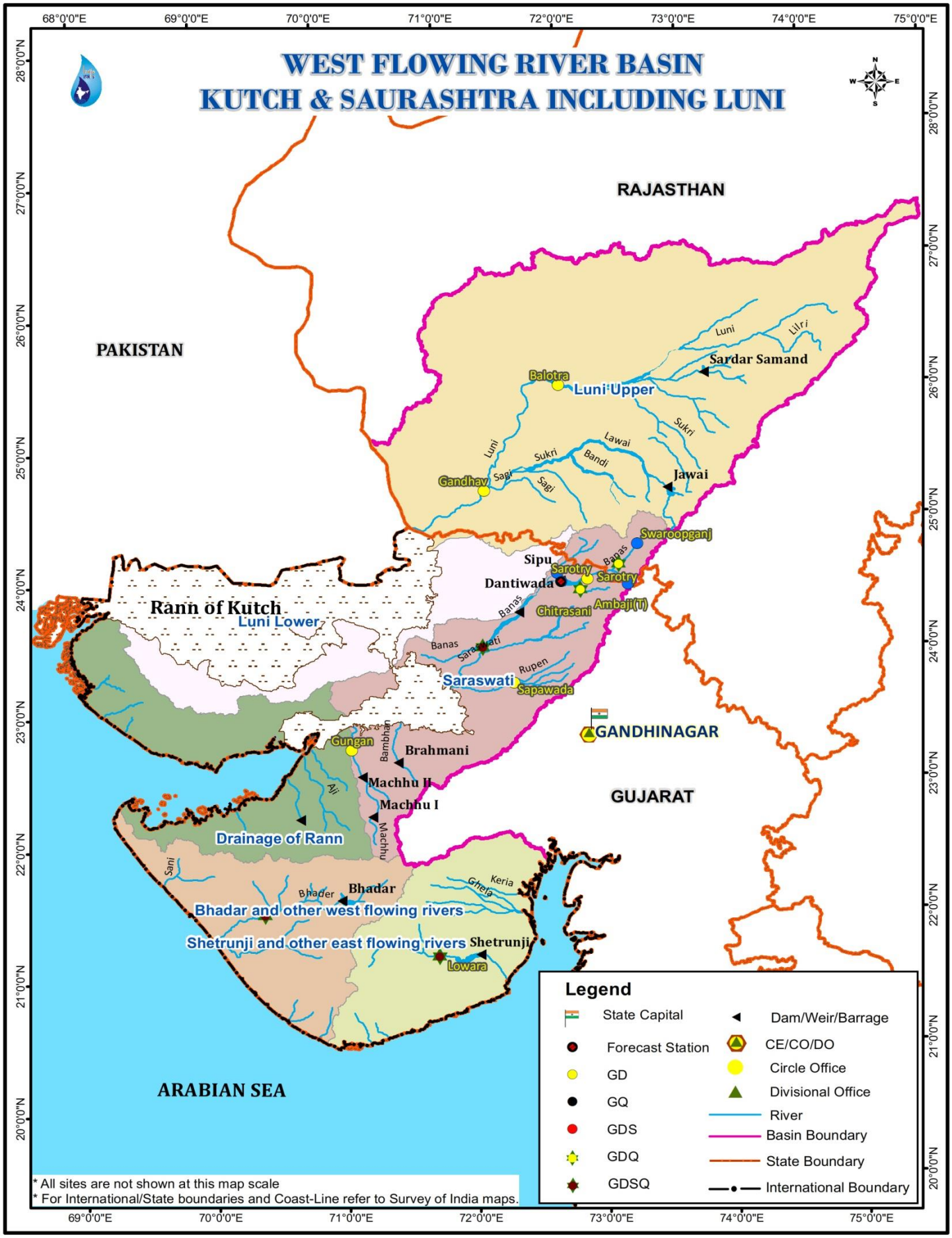
2.16.3 Shetrunji Basin: The Shetrunji is one of the major rivers of Saurashtra. The Shetrunji basin is the Eastern most basin of Saurashtra and is situated in between 21^0 $00^{'}$ to 21^0 $47^{'}$ North latitude and 70^0 $50^{'}$ to 72^0 $10^{'}$ East longitude. The river Shetrunji originates at Chachai hills in Gir forest of Junagarh district at an elevation of 380m above msl and flows towards East direction till its confluence with Gulf of Khambat near Santhrampur port. The river Shetrunji fertile the Amerli and Bhavanagar districts and a small area of Junagarh district of Saurashtra. The Shetrunji drains an area of 5,514 sq km out of which more than 50% is in Amerlidistrict. The total length of the river from its origin to the outfall into the Gulf of Khambat is 182 km. This river receives tidal influence for a length of 5 km from mouth. The Shetrunji receives several tributaries on both banks. There are 9 tributaries having lengths more than 15 km out of which Safara, Shel, Khari and Talaji are the 4 tributaries on the right bank of Shetrunji and the remaining 5 tributaries namely Stali, Gagaria, Rajwal and Kharo are on left bank. The drainage system on left bank of Shetrunji is more extensive as compared to the right bank area. The Stali, Theli and Gagaria are important tributaries feeding from left bank of Shetrunji and drain nearly 34% of total catchment area of river Shetrunji. The *Shetrunji Irrigation Scheme* is the only major project in the catchment areas of the river basin.There is one site for Gauge, Discharge, Sedimentation and Water Quality.

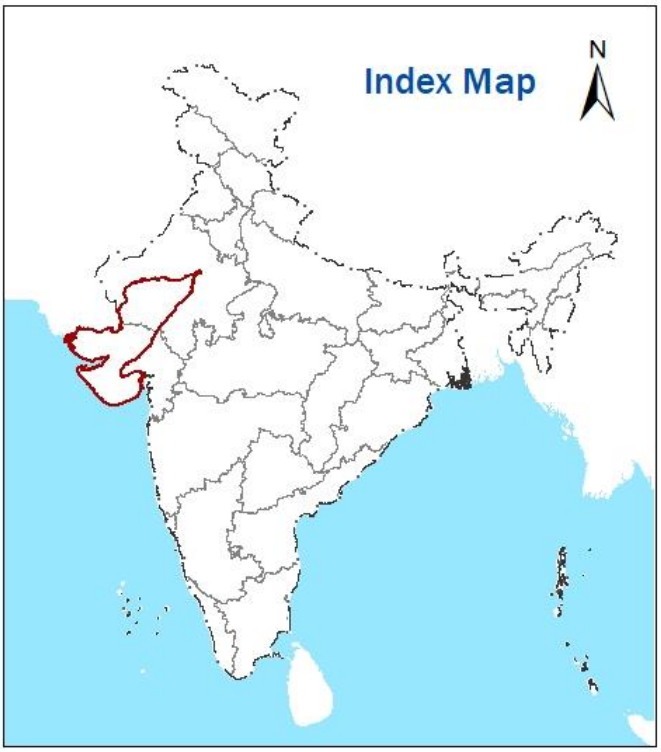
2.16.4 Bhadar Basin: Bhadar is one of the major rivers of Saurashtra and it drains about $1/7^{th}$ of the area of Saurashtra. The Bhadar basin is the south western basin and situated between $21^0$25’ to 22^0 $10^{'}$ north latitude and 69^0 $45^{'}$ to 71^0 $20^{'}$ east longitude. The river Bhadar originates at an elevation of 261m above msl in Vaddi about 26 km north-west of Jasdan in Rajkot district and flows towards south upto Jasdan village and then turns towards south-west upto village Jetpur and finally changes its direction towards west till its confluence with Arabian sea at Navibandar (Porbandar). The Bhadar River, from Jetpur to Porbandar, fertiles Rajkot, Jamnagar, Amreli and Junagadh district of Saurastra. The river drains an area of 7,094 sq km out of which 706 sq km is in hill and the rest in plain regions of Saurashtra. The total length of this South West flowing river from its origin to its outfall into the sea is 198 km. For the first 150 km, the river flows in Rajkot district and the rest of 48 km in Junagarh district. The river receives tidal influence for a length of about 26 km from mouth in Junagadh district. The river Bhadar receives several tributaries on both the banks. There are 9 major tributaries having a length of more than 25 km out of which 6 tributaries namely Gondali, Chapparwadi, Phopal, Utawali, Moj and Venu are feeding from right and the remaining 3 tributaries namely Vasavadi, Surwa and Galolia from left. The drainage system on the right bank of river Bhadar is more extensive as compared to the left bank. The *Bhadar Irrigation Scheme* is the only major project in the catchment areas of the river basin.There is one site for Gauge, Discharge, Sedimentation and Water Quality.

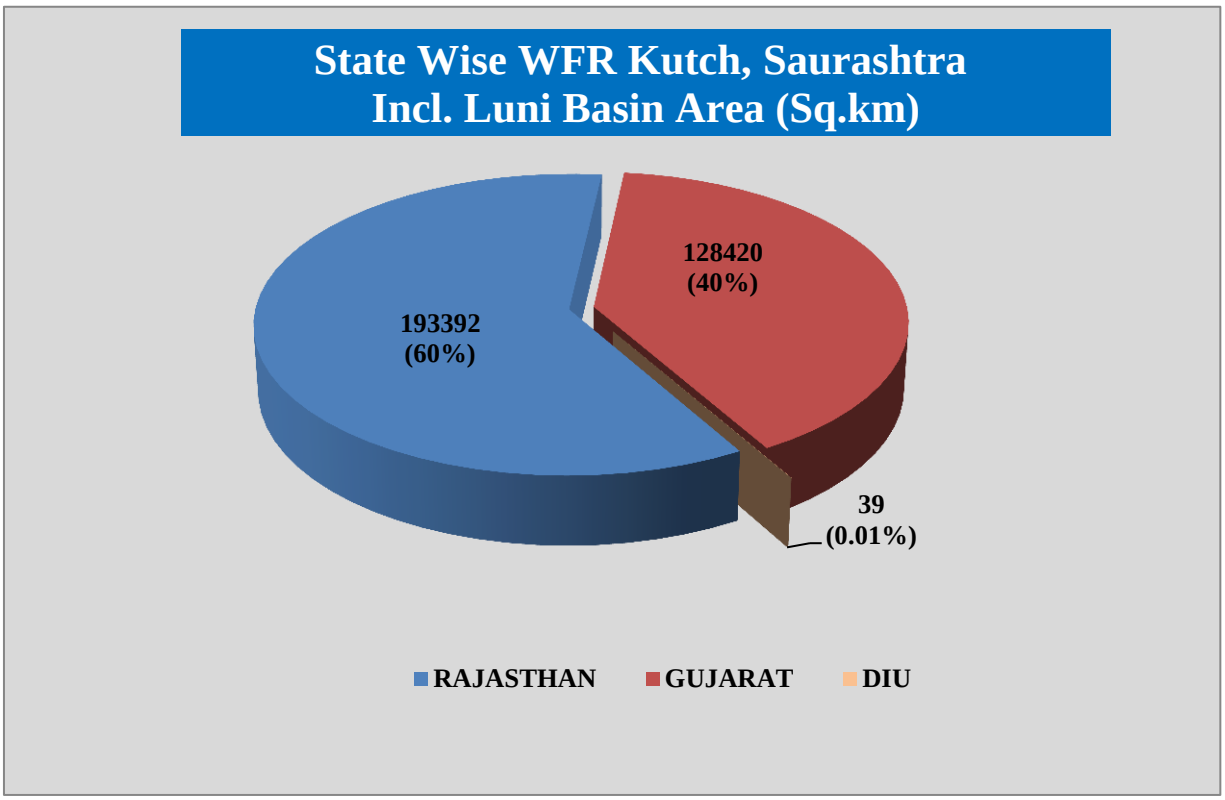
2.16.5Machhu Basin: The MachhuRiver originates from hilly ranges of Jasdan Sardar and Mandva in Rajkot district and Chotila in Surendranagardistrict and flows in north westerly direction along the district boundary of Surendranagar and Rajkot upto village Beti and then flows mostly towards north in Rajkot district and finally disappears near Malia in the little Rann of Kachchh.The Catchment area of the basin is 2515 sq km. The complete catchment area is located between 22^0 10 to 23^0 10’ north latitude and 70^0 40’ to 71^0 15’ east longitude. The main tributaries of this river are Beti, Asoi, Machhori and Maha, together account for nearly 42.52% of the total catchment area of Machhu.*Machhu-I* and *Machhu-II* are medium Irrigation projects in the basin. There is one site for Gauge and Discharge.

2.16.6Rupen Basin: The Rupen River originates from taranga hill ranges near Kheralu taluka of Mehsana district of Gujarat at an elevation of 180 metre above metre.s.l and decends in south western direction and travels through Mehsana district before it drains into little Rann of Kachchh.The Rupen basin is a northern basin of Gujarat and is situated between 23^0 25' to 24^0 00' north latitude and $71^0$30' to 72^0 46' east longitude approx. The total drainage area of Rupen River is 2,500 sq km. The important tributaries of Rupen are Pushpavati and Khari. Owing to topographical characteristics the climate is variable in the basin.There is one site for Gauge and Discharge.

2.16.7 Hydrological Observation Sites: There are in total15 H.O. sites in the basin, out of which 4 sites for measuring Gauge observations only(G), 5 sites for Gauge &Discharge (GD),2 sites for Gauge, Discharge& Water Quality (GDQ) and 3 sites for Gauge, Discharge, Sedimentation & Water Quality (GDSQ) and one site for Rainfall measurement (as per 2015-16 data).


WEST FLOWING RIVER BASIN
KUTCH & SAURASHTRA INCLUDING LUNI
RAJASTHAN
PAKISTAN
GUJARAT
GANDHINAGAR
ARABIAN SEA
Rann of Kutch
Luni Lower
Luni Upper
Drainage of Rann
Bhadar and other west flowing rivers
Shetrunji and other east flowing rivers
Balotra
Sardar Samand
Gandhav
Jawai
Swaroopganj
Sipu
Dantiwada
Sarotry
Chitrasani
Ambaji(T)
Saraswati
Sapawada
Gungan
Brahmani
Machhu II
Machhu I
Bhadar
Shetrunji
Lowara
Luni
Sukri
Lawai
Bandi
Sagi
Banas
Rupen
Bambhan
Aji
Machhu
Sani
Bhader
Keria
Ghelo
Legend
State Capital
Forecast Station
GD
GQ
GDS
GDQ
GDSQ
Dam/Weir/Barrage
CE/CO/DO
Circle Office
Divisional Office
River
Basin Boundary
State Boundary
International Boundary
* All sites are not shown at this map scale
* For International/State boundaries and Coast-Line refer to Survey of India maps.


Index Map
N


State Wise WFR Kutch, Saurashtra
Incl. Luni Basin Area (Sq.km)
128420
(40%)
193392
(60%)
39
(0.01%)
RAJASTHAN
GUJARAT
DIU

WFR Kutch, Saurashtra Including Luni Flow Line Diagram

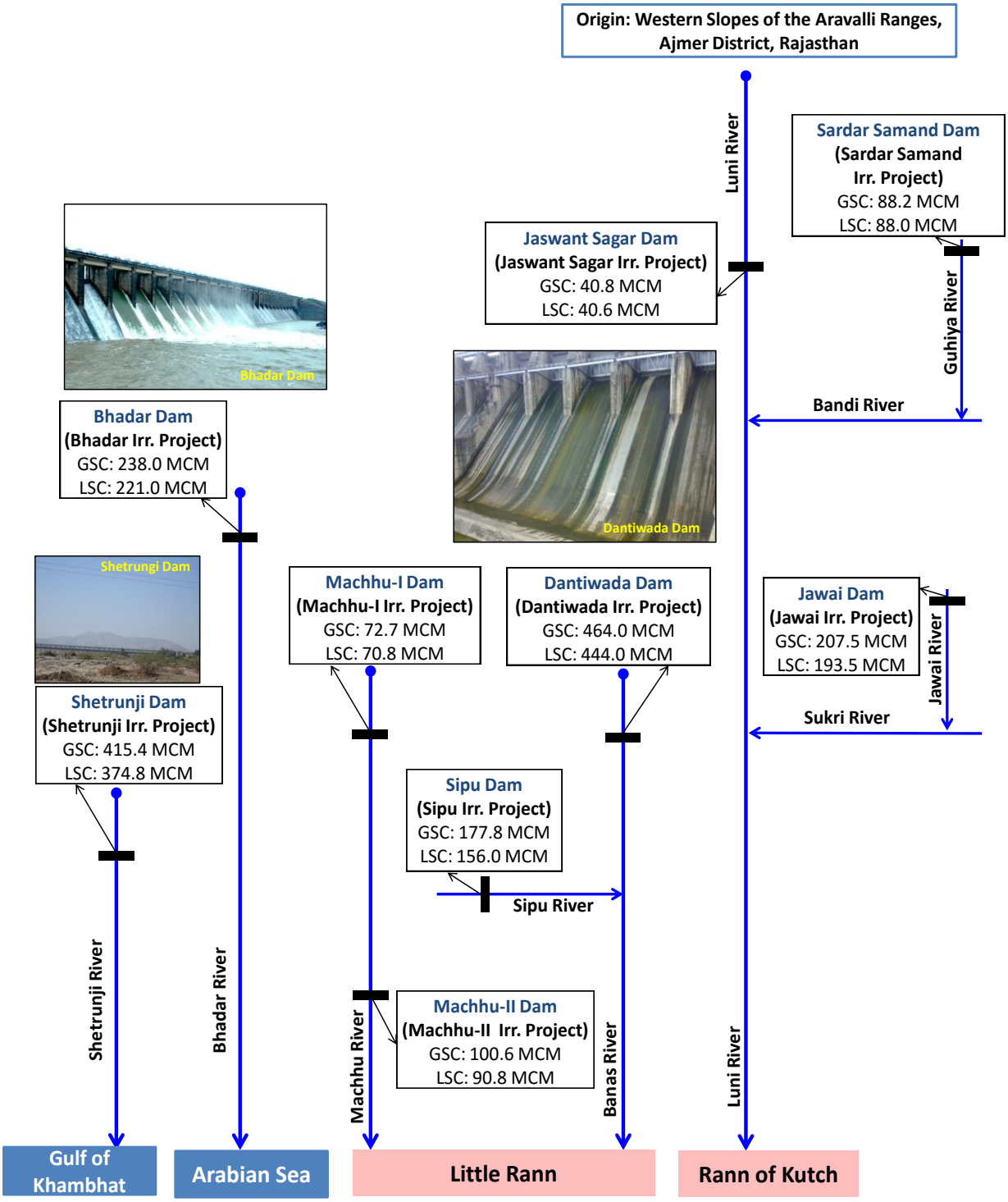
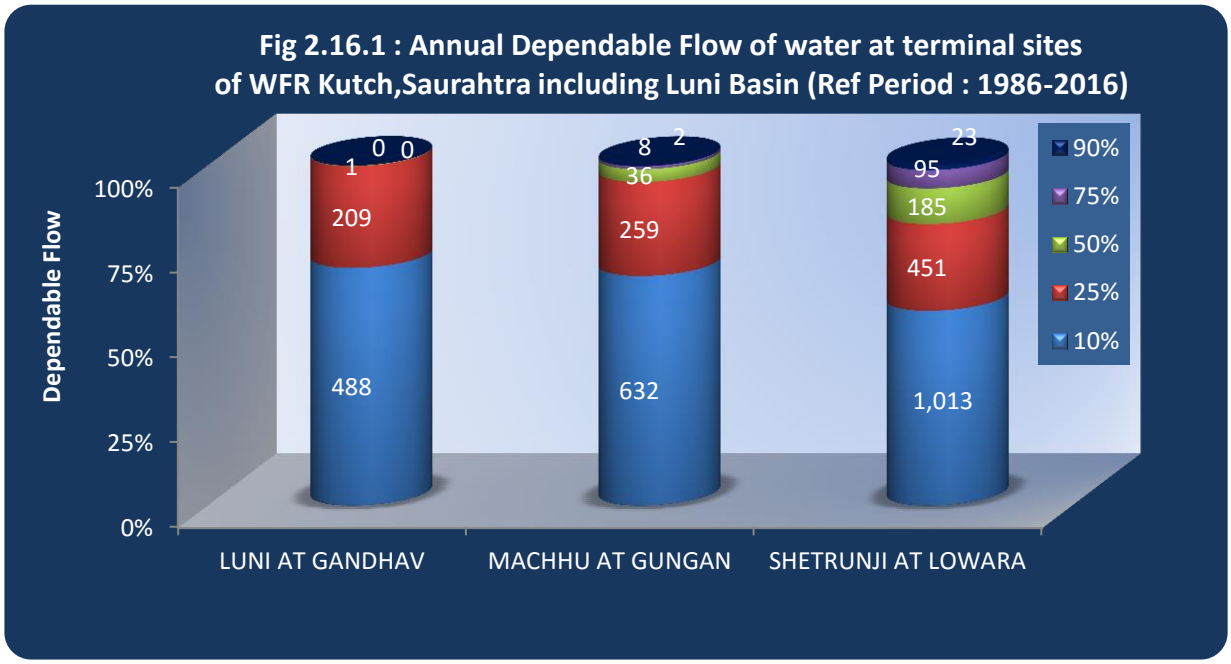


Table 2.16.1: Annual Dependable Flow Of Water at Terminal Sites Of WFR Kutch,Saurahtra including Luni Basin

Sl. No.	River @ SiteName	Period	Dependable Flow (Unit: MCM)				
			10%	25%	50%	75%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	LUNI AT GANDHAV	6/1986 to 5/2016	487.56	208.74	1.01	0.00	0.00
2	MACHHU AT GUNGAN		631.90	258.87	35.57	7.79	1.85
3	SHETRUNJI AT LOWARA		1012.61	451.09	185.49	95.30	22.90



2.16.8 Land Use Statistics: Table 2.16.2 to Table 2.16.4 present below the land use pattern, gross irrigated area and net irrigated area for thebasin as compared to all basins(Region-III).

TABLE 2.16.2: LAND UTILISATION PATTERN OF WFR KUTCH, SAURASHTRA INCLUDING LUNI AND ALL RIVER BASINS (REGION-III) DURING 2015-16 (AREA IN SQ. KM.)

Basin Name	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
		Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9
WFR Kutch, Saurashtra including Luni	74,049.76	3,259.37	8,439.91	8,372.15	12,720.60	41,257.72	9,174.72	50,432.44
All Basins	1,087,874.05	246,250.62	164,968.18	81,487.09	142,270.82	452,897.35	116,861.93	569,759.28

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.16.3: GROSS AREA IRRIGATED BY SOURCES OF WFR KUTCH, SAURASHTRA INCLUDING LUNI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Gross Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
WFR Kutch, Saurashtra including Luni	1,538.05	-	1,538.05	265.43	8,668.26	5,542.55	14,210.82	40.92	16,055.22
All Basins	59,945.17	2,800.36	62,745.53	14,328.89	79,355.85	46,594.01	125,949.87	11,679.44	214,703.72

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

TABLE 2.16.4: NET AREA IRRIGATED BY SOURCES OF WFR KUTCH, SAURASHTRA INCLUDING LUNI AND ALL RIVER BASINS (REGION-III) DURING 2015-16(AREA IN SQ. KM.)

Basin	Net Irrigated Area								
	Canal			Tank	Well			Other Source	Total
	Govt.	Private	Total		Tubewell	Other well	Total		
1	2	3	4	5	6	7	8	9	10
WFR Kutch, Saurashtra including Luni	1,369.43	-	1,369.43	265.31	5,875.33	4,386.09	10,261.42	39.28	11,935.44
All Basins	43,622.66	14.25	43,636.90	13,345.66	58,730.18	38,549.46	97,279.64	23,306.12	177,568.33

Source : Consolidated data of river basins from the district level data of India-WRIS and Dte. of Economics & Statistics, M/o. Agriculture

2.16.8 Urban Centre: Ahmedabad & Vadodara are two important cities on west flowing rivers basin.

2.16.9 Industries: There are important industries of Engg Handicraft, Stonework, cement, chemical, Liquor, Sugar, Tex and wools etc.

2.16.10 Minerals: Important minerals found in the basin are Phyllites, gneisses, Quartzite and Granite.

2.17 Land Use Statistics Graphs of the Basins (Region-III)

Fig A.1 : Percentage of Land Utilization Pattern of Top 5 Basins based on reporting area during 2015-16

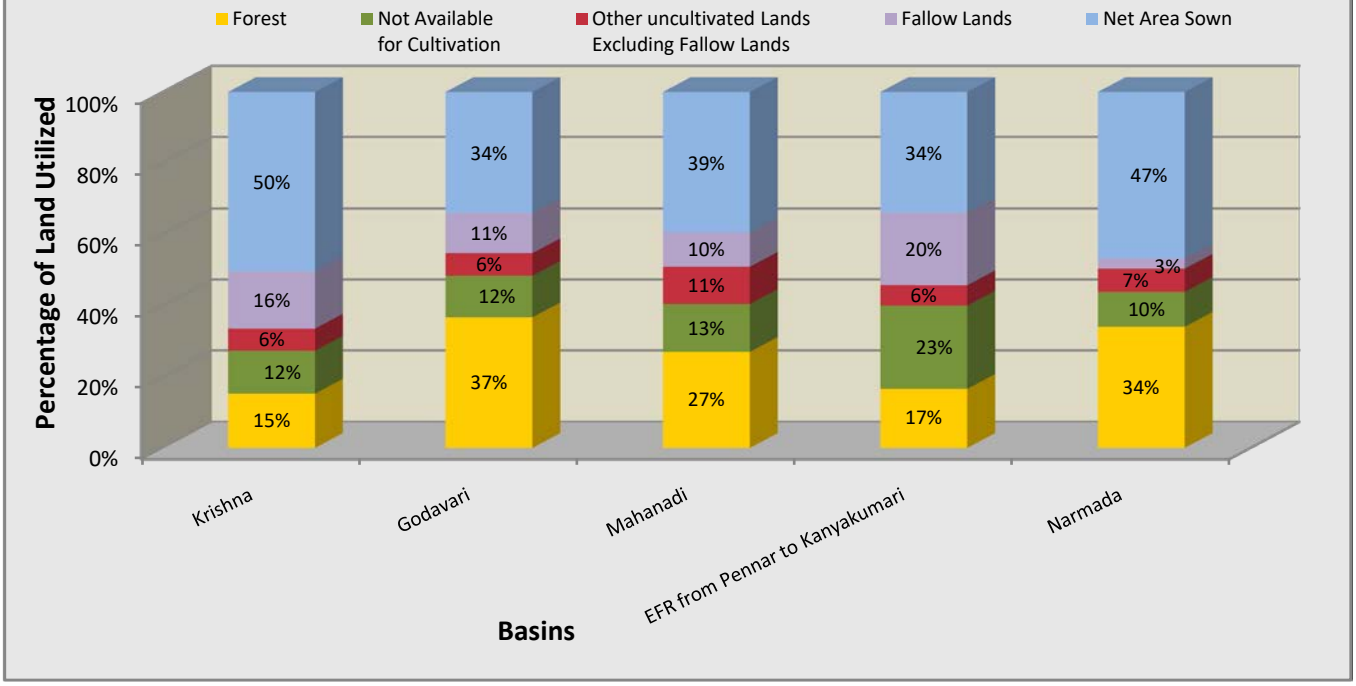


Fig A.2 Basin Wise Top 5 Gross Irrigated Area (In '000 Sq. Km.) by water Sources during the Year 2015-16

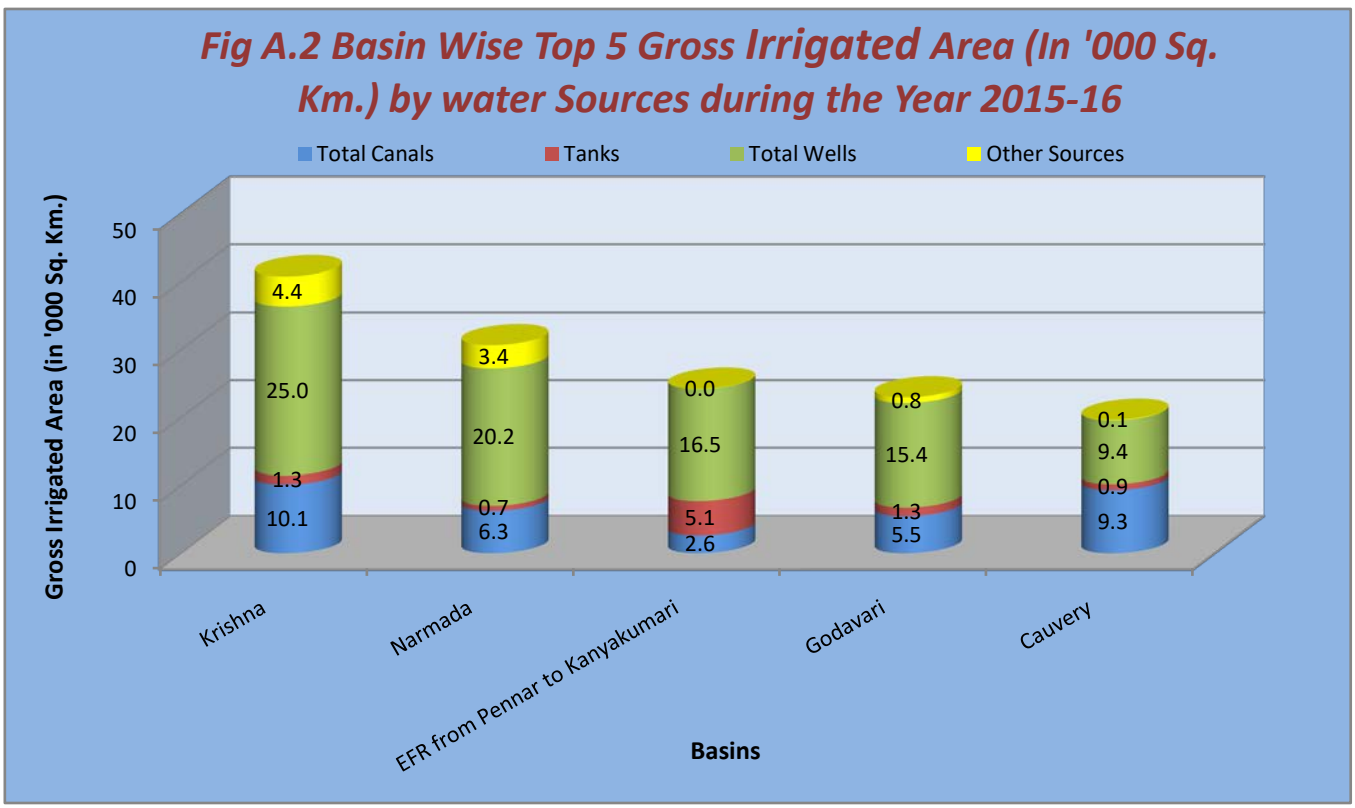


Fig A.3 : Gross area irrigated (in '000 sq. Km.) by different water sources across river basins during the year 2015-16

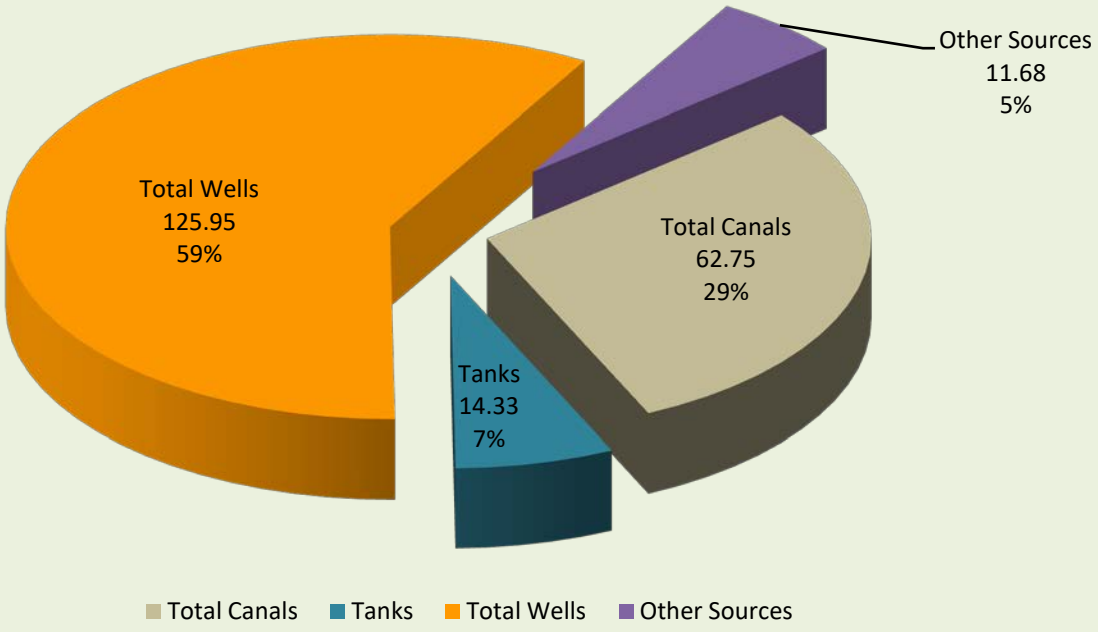
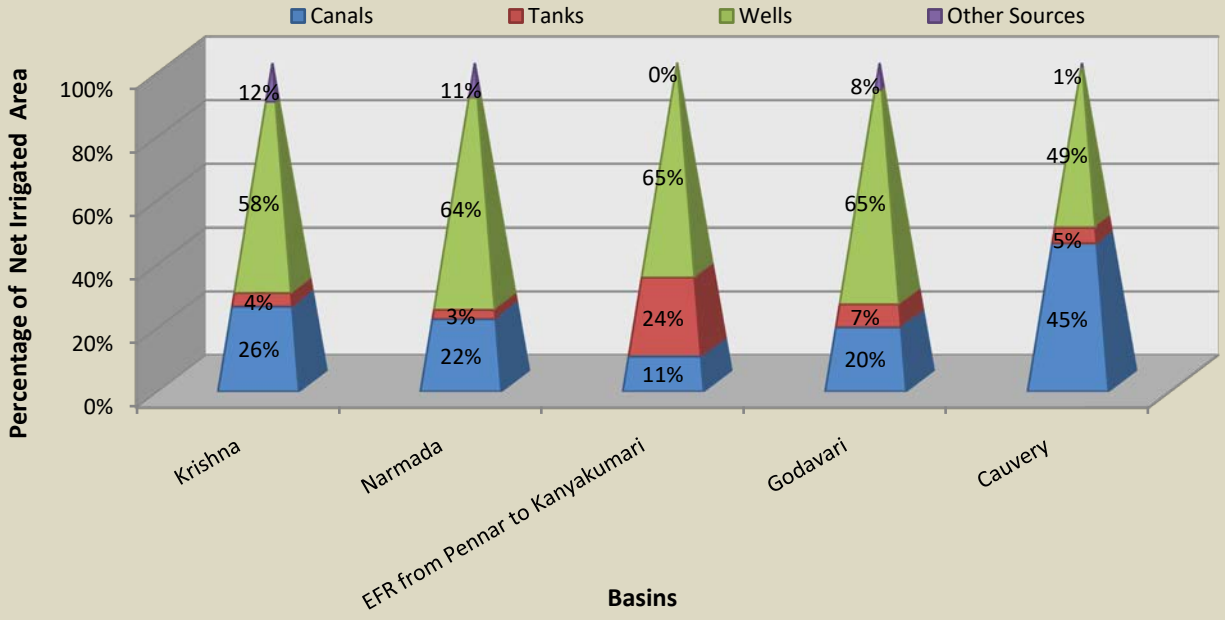


Fig A.4: Percentage of Net Irrigated area of Top 5 Basins by water sources during the year 2015-16



Appendix

Tables on Hydrology, Land Use Statistics and Ground Water Resources of the River Basins (Region-III)

Table 1 : Avg. Annual Flow & Live Storage Capacity by River Basin (As on 01.12.2017)

Unit: (BCM)

Sl. No.	Basin	Average Annual Flow (BCM)	Live Storage		
			Completed Project	Project Under Construction	Total
1	2		3	4	5
1	INDUS	45.53	16.223	0.100	16.3232
2	GANGA	509.52	48.677	7.649	56.326
3	BRAHMAPUTRA	527.28	1.718	0.795	2.5131
4	BARAK & OTHERS	86.67	0.719	9.172	9.891
5	GODAVARI	117.74	35.04	8.412	43.4515
6	KRISHNA	89.04	50.651	4.156	54.807
7	CAUVERY	27.67	9.083	0.015	9.098
8	PENNAR	11.02	2.938	2.141	5.079
9	EAST FLOWING RIVER BETWEEN MAHANADI TO PENNAR	26.41	2.676	1.181	3.857
10	EAST FLOWING RIVER BETWEEN PENNAR AND KANYAKUMARI	26.74	1.441	0.015	1.456
11	MAHANADI	73.00	13.06564	1.461	14.52694
12	BRAHMANI & BAITARNI	35.65	5.55369	0.703	6.25669
13	SUBERNAREKHA	15.05	0.309	2.150	2.459
14	SABARMATI	12.96	1.577	0.109	1.686
15	MAHI	14.96	5.017	0.150	5.167
16	WEST FLOWING RIVER OF KUTCH, SAURASHTRA INCLUDING LUNI	26.93	6.336	0.511	6.847
17	NARMADA	58.21	21.816	2.641	24.4567
18	TAPI	26.24	9.137	1.558	10.695
19	WEST FLOWING RIVERS FROM TAPI TO TADRI	118.35	14.668	2.430	17.098
20	WEST FLOWING RIVERS FROM TADRI TO KANYAKUMARI	119.06	11.023	1.416	12.439
21	AREA OF INLAND DRAINAGE OF RAJASTHAN	0.00	0.000	0.000	0.000
22	MINOR RIVER BASINS DRAINING INTO MYANMAR AND BENGLADESH	31.17	0.14358	0.000	0.14358
GRAND TOTAL		**1999.2**	**257.81**	**46.765**	**304.577**

Source : WM Directorate, Central Water Commission.

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (ao-b')	Longitute (xo-y')	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.1	**Basin: Mahanadi**									
2.1	Rises from Farsiya village near Nagri Town in Raipur Distt. of Chhattisgarh at an elevation of 442 m. Length 851 Km.	Madhya Pradesh	130	Mahanadi	48230	$19^{0}8'$	$80^{0}28'$	13 to 48.8	1400	-
		Chhattishgarh	74970	Pairi	3503	to	to			
		Odisha	65600	Seonath	30761	$23^{0}32'$	$86^{0}43'$			
		Jharkhand	650	Jonk	3673					
		Maharashtra	250	Hasdeo	9803					
				Mand	5237					
				Ib	12447					
				Ong	5128					
				Tel	22818					
		Total	**141600**	**Total**	**141600**					

Source : CE, Mahanadi & Eastern Rivers Organisation, CWC, Mahanadi Bhawan, P.O. Bhoi Nagar, Bhubaneshwar (Ordisha) (2015 - 2016) Mahanadi Basin.

(Contd.)

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.1	**Basin: Mahanadi**									
2.1	Mahanadi	G= 17 GD= 1 GDQ= 1 GDSQ= 18 RF=6 G(S)= 12 GD(S)= 2 **Total = 46**	Iron Ores, Coal, " Lime Stone, Quartzite, Copper Ores, Silver, Lead, Mica, Bauxite, Galena & Graphite	Iron Steel, Copper, Cement, Paper and Aluminium	47843 MCM (1972-73 to 2015-16) Tikarapara (124450 Sq. Km.) (1972-73 to 2015-16) Tikarapara (124450)	Black Red Yellow Brownish red to Yellowish red Dark Gray Coastal alluvial	Hirakud Dam	8141.0	5892.0	-
							Tandula	322.0	312.0	-
							Bango Dam	3417.0	3046.0	-
							Sondur Dam	198.0	179.0	-
							Kharang Tank	-	192.32	-
							Manairi Tank	151.0	148.0	-
							Kodar	160.23	148.91	-
							Ravisankar	909.00	768.00	-
							dam	-	-	-
							Murumsili	165.00	162.00	-
							Dudhwa	288.00	284.00	-
							Mayana tank	211.24	157.93	-
							Kelo project	76.00	46.00	-
							Kosarteda	72.86	63.70	-
							project	-	-	-
							Sikasar dam	217.00	199.00	-
							Lower Indra	321.63	314.25	-
							Lower Suktel	320.28	263.43	-
							Paralkot dam	66.30	63.60	-

Source : CE, Mahanadi & Eastern Rivers Organisation, CWC, Mahanadi Bhawan, P.O. Bhoi Nagar, Bhubaneshwar (Ordisha) (2015-16) Mahanadi Basin.

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (ao-b')	Longitute (xo-y')	Temprature Variation (Centigrade)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.2	**Basin: Subernarekha**									
2.2	**Subernarekha** Rises from Nagri village in Ranchi Dist. of Jharkhand at an elevation of 600 m. Length 395 Km	Jharkhand Odisha West Bangal **Total**	13590 3201 2160 **18951**	Subernarekha Kanchi Karkari Kharkai Raru Garru Dulang **Total**	7383 1096 1341 6611 680 640 1200 **18951**	$21^0$15' to $23^0$34'	$85^0$8' to $87^0$32'	9 to 47.2	1800	-

Source : CE, Mahanadi & Eastern Rivers Organisation, CWC, Mahanadi Bhawan,Bhoi Nagar, Bhubaneshwar (2015-16)Subarnarekha, Burhabalang & Baitarni Basin. (Contd.)

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.2	**Basin: Subernarekha**									
2.2	**Subernarekha** (water withdrawals during 1997-99)	G= 5 GD=2 GDQ=1 GDSQ=4 **Total = 12**	Coal, Iron Ores, Bauxite, Copper Chromium Gold, Vanadium Lime stone,Dolomite Asbestos China Clay, Talc and Building Stone	"Tobacco Products, Cement, Asbestos Sheets, Ceramics, Glass, Coaches & Locomotive , Automobiles, Agricultural Equipment, Wires & Cables, Iron & Steel Machinary, Metal Tubes & conduits, Copper & Brass, Chemical Acids & Caustics, Fertilizer, Soaps"	6750 (1971-72 to 2015-16) Ghatshila (14176)	Gravelly Sandy Loams Alluvium & Black Clays Laterite Red etc.	1. Kanchi Irrigation Scheme 2. Chandil Dan 3. Kharkai Dam Icha Dam 4. Jambhira	- 1963 1048 216	- 1611 931 214.10	- - - -

Source : CE, Mahanadi & Eastern Rivers Organisation, CWC, Mahanadi Bhawan,Bhoi Nagar, Bhubaneshwar (Ordisha) (2015-16)Subarnarekha, Burhabalang & Baitarni Basin.

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (ao-b')	Longitute (xo-y')	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.3	**Brahmani and Baitarni**									
2.3.1	**Brahmani (South Koel)** Rises from Nagri village in Ranchi Distt. of Jharkhand at an elevation of 600 m. Length 799 Km.	Jharkhand Orissa Chhatisgarh Total	15769 22364 900 39033	Brahmani Karo Sankh Tikra **Total**	26831 2741 6933 2528 **39033**	$20^{0}28'$ to $23^{0}38'$	$83^{0}55'$ to $87^{0}3'$	10 to 43	1460	Average Monthly Evaporation varies from 18 to 135
2.3.2	**Baitarani** Rises in the hill ranges of Keonjhar Distt. of Orissa near Manka-rancho village at an elevation of 900 m. Length 355 Km	Jharkhand Odisha **Total**	736 10246 **51822**	Salindi Kusai Orarai Kangira Deo Kanjhari Sita Kusai Others **Total**	1793 870 821 458 723 498 505 531 4112 **10982**	20-35 to 22-15	85-10 to 87-03	12 to 38	1450	-

Source : CE, Mahanadi & Eastern Rivers Organisation, CWC, Mahanadi Bhawan,Bhoi Nagar, Bhubaneshwar(2015-16)Subarnarekha, Burhabalang & Baitarni Basin.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.3	**Brahmani and Baitarni**									
2.3.1	**Brahmani**	G= 1 GQ=1 GDSQ=6 **Total = 8**	Iron Ore, Copper, Chromite, Coal, Manganese Lime stone, Dolomite, Lead, Fire-Clay, Bauxite & China -Clay	Steel Plants Cement Alu minimum Explosive Chemical Machine Tools Fertilizer Plant	16759 (1980-81 to 2015-16) Jenapur (33955)	Red & Yellow Mixed Red & Black Red Sandy Red Loamy & Coastal Alluvium	Rengali	4400	3413.71	-
2.3.2	**Baitarani**	G = 3 GDSQ=2 RF=1 **Total = 6**	Iron Ore, Copper, Chromite, Asbestos, Manganese, Atomic Minerals, China Clay & Soap Stone	Ferro - Manganese Plant Sponge Iron Plant	4732 (1972-73 to 2015-16) Anandpur (8570)	Red & Yellow Laterite Alluvial	Akhuapada Kanupur Irrigation Project Salandi Baitarni System Anandpur Barrage	- 331.02 565 - -	- 268.97 556.50 - -	451.46 - - Under Construction

Source : CE, Mahanadi & Eastern Rivers Organisation, CWC, Mahanadi Bhawan,Bhoi Nagar, Bhubaneshwar (Ordisha) (2015-16)Subarnarekha, Burhabalang & Baitarni Basin.

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.4	**Godavari**									
2.4	Godavari rises from Nasik distt. Of Maharashtra at an elevation of 1067 m, length 1465 km. of Maharashtra at an elevation of 1067 m. Length 1465 Km.	Andhra Pradesh	13763	Godavari (Upper)	33502	16º 19'00' N	73º 24'00"E	7 to 48	1042.75	Mean daily evaporation varies from about 5 mm near coastal region to 16.6 mm in upper region.
		Telangana	62563	Pravara	6537	to	to			
		Karnataka	4692	Purna	15579	22º 34'00" N	83º 04'00"E			
		Madhya Pradesh	24712	Manjira	30844					
		Maharashtra	150150	Godavari(Middle)	17205					
		Orissa	17830	Maner	13106					
		Chhatisgarh	39102	Pranhitha	61093					
				Godavari(Lower)	24869					
				Indravathi	41665					
				Sabari	20427					
				Penganga	23898					
				Wardha	24087					
		Total	**312812**	**Total**	**312812**					

Source : Water Year Book (June 2015 - May 2016) Gadavari.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Sites	Principal Minerals	Major Industries	Average Annual Runoff(MCM) at terminal site with Catchment area (sq. km)	Soil Charastirstics	Major Projects Name	Gross Storage (MCM)	Live Storage (MCM)	Water Withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.4	**Godavari**									
2.4	**Godavari**	GD = 18 GDQ = 6 GDSQ = 25 **Total = 49**	Bauxite, Manganege, iron Ore, Coal, Lead, Zinc, Corundum	Paper, timber, Other timber products Rice milling, cotton, Ginning, Pressing, Spinning & Weaving, Manufacture of various textiles, Extraction of oil from Ground Nut & other oil seeds, Manufacture of sugar.	Runoff =86691 MCM, 06/1966 to 05/2016 Polavaram, Catchment Area = 307800 sqkm.	Black,Red, Laterite, Alluvium, Mixed, Saline & Alkaline	Balimela	3610.00	2675.00	
							Sriram Sagar Project (SRSP)	3172.00	2322.00	
							Jayakwadi	2909.00	2170.00	
							Upper Indravati	2300.00	1485.50	
							Isapur (Upper Pemganga)	1254.00	951.00	
							Totladoh	1241.11	1091.00	
							Lower Penganga	1045.37	864.80	
							Yeldari (Jintur)	934.44	809.77	
							Upper Wardha	786.48	614.80	
							Gosikhurd	769.48	376.59	
							Mula	736.32	608.89	
							Lower Dudhana	344.80	242.00	
							Bembla	322.07	302.67	
							Bhandardara	312.60	304.10	
							Itiadoh dam	288.83	225.12	
							Lower wardha	253.34	216.87	
							Siddheshwar	250.85	80.96	
							Human	247.00	227.75	
							Sapali (Upper Penganga)	241.00	199.00	
							Nilwande	236.00	228.75	
							Kamthikhairy	230.00	180.00	
							Darna	226.87	219.82	
							Erai	226.50	193.00	
							Tultuli	225.05	216.95	
							Manjra (kaij)	224.09	176.96	
							Gangapur	215.88	203.88	
							Mukane	214.16	203.47	
							Sirpur (Deori)	203.84	192.52	

Source : Water Year Book (June 2015 - May 2016) Gadavari.

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-b')	Longitute (x^{o}-y')	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.5	**Basin: Krishna**									
2.5	**Krishna** Rises from near Mahabaleshwar about 64 Km. from Arabian Sea at an elevation of 1337 m. Length 1401 Km.	Maharashtra Karanataka Andhra Pradesh & Telangana **Total**	69,425 113,271 76,252 **258,948**	1) Koyna 2) Varna 3) Panchganga 4) Dudhganga 5) Ghataprabha 6) Don 7) Malaprabha 8) Bhima 9) Tungabhadra 10) Swarnamukhi 11) Dindi 12) Peddavagu 13) Halia 14) Musi 15) Paleru 16) Munneru 17) Main Krishna	4890 1948 2575 2350 8829 2486 11549 70614 71417 2585 3490 2343 3780 11212 3263 10409 258948	13° 10' to 19° 22' N	73° 17` to 81° 9' E		489.4	

Source : Krishna Basin, Daily Stage-Discharge Data (Vol. I) (June 2015 - May 2016).

(Contd.)…

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.5	**Basin: Krishna**									
2.5	**Krishna** Mahabaleshwar Western Ghats Altitude: 1337 M Length: 1401 Km.	 GD = 6 GDQ = 5 GDSQ = 29 **Total = 40**	Gold Bauxite Limestone Iron ore Manganese Quartz Copper Redoxide Soapstone	Textiles Sugar Chemical Cement Automobile Engineering Nuclear	Site: Vijayawada Av. Annual flow 21463 MCM Catchment Area 2,51,360 Sq.Km.	black soils (regur), red soils, laterite and lateritic soils, alluvium, mixed soils (red and black, red and yellow, etc.) and saline and alkaline soils	1) Radhanagari	236.8	219.9	
							2) Ghod	216.3	170.7	
							3) Khadakwasla	85.9	62.6	
							4) Vir Dam	278.5	265.8	
							5) Koyna	2797.5	2677.7	
							6) Bhadra	2023	1635	
							7) Tungabhadra	3764	3700	
							8) Almatti	1196	843	
							9) Narayanpur	1066	863	
							10) P.D. Jurala	338.1	192.7	
							11) Musi	136.9	130.3	
							12) Srisailam	8722	7164	
							13) Nagarjuna Sagar	11560	5733	
							14) Prakasam Barrage	87	65	

Source : Krishna Basin, Daily Stage-Discharge Data (Vol. I) (June 2015 - May 2016)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.6	**Basin: Cauvery**									
2.6	Originate at Talacauvery in Coorg Distt. of Karnataka at an elevation of 1541 m. Length 800 Kms.	Karnataka Tamil Nadu Kerala Puducherry **Total**	34273 43856 2866 160 **81155**	Harangi Hemavati Lakshmana Tirtha Kabani Shinsha Arkavathi Bhawani Amravathi Others **Total**	717 5410 1690 7040 8469 4150 6154 8380 39145 **81155**	10° 9' to 13^{0} 30' N	75^{0} 27' to 79^{0} 54' E	20 to 30	500 to 3800	Annual 1500 to 2500

Source : Water Year Book (June 2015 - May 2016) Cauvery.

(Contd.)

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.6	**Basin: Cauvery**									
2.6	**Cauvery**	GDQ & RF= 8 GDSQ & RF= 19 GDQ = 21 GDSQ = 15 **Total = 35**	Stone Mining	Paper Mills Sugar Mills Chemical Factory Cotton Mills	4877 MCM (2014 -15) Site: Musiri (66243)	Black Cotton Red Laterite Ailuvial Forest	Krishnaraja Sagar Hemavathi Mettur Bhawani Sagar Reservoir	1400.35 1050.62 2708.79 928.80 552.74	1275.69 1012.60 2646.77 907.80 453.06	

Source : Water Year Book (June 2015 - May 2016) Cauvery.

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Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.7	**Basin: Pennar**									
2.7	**Pennar** Rises from Chennakesava Hills of Nandidurg range in Karnataka Length 597 Km.	Karnataka	6937	Jayamangali	1282	13^{0} 18' to	77^{0} 1' to	15.2 to	508 to 988	
		Andhra Pd.	48276	Chitravathi	5908	15^{0} 49' N	80^{0} 10' E	40.9		
				Kunderu	8057					
				Papagini	7423					
				Sagileru	3077					
				Cheyyeru	7325					
				Others	22141					
		Total	**55213**	**Total**	**55213**					

Source : Water Year Book (June 2015 - May 2016) East Flowing Rivers Basin Vol.I, Stream Flow & Suspended Sediment Data.

(Contd.)

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.7	**Basin: Pennar**									
2.7	**Pennar**	GDQ= 6 GDSQ= 2 **Total = 8**	Guvalacheruvu Quartzite, Vempallydolamite, Lime Stone		1683 Nellore (50800)	Red, Black, Sandy	Somasila Pulivendula Branch Canal Tungabhadra RB High Level Canal Stage–I & II	2093.00		

Source : Water Year Book (June 2015 - May 2016) East Flowing Rivers Basin Vol.I, Stream Flow & Suspended Sediment Data.

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				Tributary	Area (Sq.Km)	Latitude (ao-b')	Longitute (xo-y')	Temprature Variation (Centigrade) (°C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.8	**Basin: East Flowing Rivers from Mahandi to Pennar**									
2.8.1	**Rushikulya** Rises from Matabarhi village of Kandhamal Distt. Of Orissa at an elevation of 1000 m. Lenth 146 Km	Orissa **Total**	7700 **7700**	Rushikulya Baghua Barhanadi Pathama Ghodapada **Total**	2798 736 2353 663 1150 **7700**	19-07 to 20-19	84-01 to 85-06	12 to 44	1360	-
2.8.2	**Vamsadhara** Rises from Near Lanjigah village in Kalahandi Distt. Of Orissa Length 254 Km	Orissa Andhra Pradesh **Total**	8015 2815 **10830**	Vamsadhara Harbhangi(Ganguda) Sanna Nadhi Mahendrathanaya Chauldua Phalphalia **Total**	5458 1689 1276 1115 768 524 **10830**	18-15 to 19-55	83-20 to 84-20	12 to 43	1400	-
2.8.3	**Sarda** Elevation of Origin is 1000 m. Length 122 Kms.	Andhra Pradesh **Total**	2665 **2665**			17-25 to 18-17	82-32 to 83-06	18 to 42.5	1000	-
2.8.4	**Nagavali** Rises from Near Lakhbahal village in Kalahandi Distt. Of Orissa at an elevation 1300 m. Length 256 Km.	Orissa Andhra Pradesh **Total**	4462 5048 **9510**	Nagavali Janjhavati Suvaarnamukhi Vegavathi Others **Total**	5704 931 1275 994 606 **9510**	18-10 to 19-44	82-53 to 84-05	16 to 40	1000	-
2.8.5	**Gundlakama** Rises near Iskagudem Village in Kurnool Distt. of Andhra Pd. at an elevation of 600 m. Length 220 Km.	Andhra Pd. **Total**	8494 **8494**	Kandleru	7681	15-38	78-47			
2.8.6	**Paleru** Rises from near Gogulapalle Village in Nellore Distt. of Andhra Pradesh at an elevation of 325 m. Length 104 Km.	Andhra Pd. **Total**	2483 **2483**			15-17	79-13			

Source : CE, Mahanadi & Eastern Rivers Organisation, CWC, Mahanadi Bhawan, Bhoi Nagar, Bhubaneshwar (2015-16)Rushikulya, Vamsadhara, Sarada & Nagavali Basin.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.8	**Basin: East Flowing Rivers from Mahandi to Pennar**									
2.8.1	**Rushikulya** (water withdrawals during 1997-99)	G=7 GD= 3 GDSQ=5 **Total = 15**	Clay, Lime Stone, Manganese, Sand Talc, Black Sand & Grinding Material	Chemical Sugar Spinning Mills	2214 (1993-94 to 2015-2016) Purushottampur (7112)	Red & Yellow Laterite Alluvial Saline	Rushikulya System	-	-	-
2.8.2	**Vamsadhara** (water withdrawals during 1997-99)		Manganese, Grayphite, Lime Stone, Bauxite, Mica&Quaartz	No large scale Industries	2623 '(1971-72 to 2015-2016) Kashi Nagar '(7820)	Red & Black Red Sandy Black Laterite Yellow	-	-	-	-
2.8.3	**Sarda** (water Withdrawals during 1997-99)		Manganese Grayphite, Aluminiium Bauxite & Mica Quaaartz, Fire Clay	Steel Plant	611 '(1991-92 to 2015-2016) Anakapalli (2090)	Red & Coastal Sands Laterite Alluvial Forest	-	-	-	-
2.8.4	**Nagavali** (water withdrawals during 1997-99)		Manganese Grayphite Lime Stone Bauxite & Mica,Quartz	There is no Large scale Industries.	2579 (1991-92 to 2015-2016) Srikakulam (9500)	Coastal Sand Red Mixed Laterite Forest	Thotapally Narayan Puram Jaiyavathi	- - -	- - -	189.73 79.97 113.27
2.8.5	**Gundlakamma**				12 Marella (7681)					
2.8.6	**Paleru**				N.A					

Source : CE, Mahanadi & Eastern Rivers Organisation, CWC, Mahanadi Bhawan, Bhoi Nagar, Bhubaneshwar (2014 -15)Rushikulya, Vamsadhara, Sarada & Nagavali Basin.

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.9	**Basin: East Flowing Rivers from Pennar to Kanyakumari**									
2.9.1	**Swarnamukhi** Rises from Pakada village in Chittur Distt. of Andhra Pd. at an elevation of 300 m. Length 130 Km.	Andhra Pd. **Total**	3225 **3225**			13-28	79-09	22.5 to 32	762 to 1270	
2.9.2	**Kalingi** Rises near Kalahasti in Andhra Pradesh Length 76 Km.	Andhra Pd. **Total**	5927 **5927**	Kalleru						
2.9.3	**Palar** Rises beyond Talag- rore village in Kolar Distt. of Karnataka at an elevation of 900 m Length 348 Km.	Karnataka Andhra Pd. Tamil Nadu **Total**	3044 4681 10146 **17871**	Poini Cheyyar Others	2400 1953 13518 17871	12-39 to 12-54	78-32 to 79-56	22.5 to 32.5	762 to 1270	
2.9.4	**Ponnaiyar** Rises near Hongashenhalli Village in Kolar Distt. of Karnataka at an elevation of 900m. Length 396 Km.	Karnataka Andhra Pradesh Tamil Nadu **Total**	3530 210 12279 **16019**			11-45 to 13-30	77-33 to 79-47	25 to 30	762 to 1270	
2.9.5	**Vellar** Rises near village Tumba in Chottori Hills of Eastern Ghats in Salem Distt. of Tamil Nadu at an elevation of 900 m. Length 210 Kms	Tamil Nadu **Total**	8922 **8922**							

Source : Water Year Book (June 2015 - May 2016) East Flowing Rivers Basin Vol.I, Stream Flow & Suspended Sediment Data.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.9	**Basin: East Flowing Rivers from Pennar to Kanyakumari**									
2.9.1	**Swarnamukhi**	GDQ = 1			854 Naidupeta (2650)					
2.9.2	**Kalingi**	GDSQ=1			550 Sullurpet (5927)					
2.9.3	**Palar**	GDQ= 4			1945 Chengalpet (16230)					
2.9.4	**Ponnaiyar**	GDQ=1 GDSQ=2	Lime Stone, Sand Stone, Quartzite		556 Villupuram (12900)	Krishnagiri Sathanur Reservoir	66.10 228.91			
2.9.5	**Vellar**	GDQ=1			519 Kudalaiyathur (7890)		Vellar			

Source : Water Year Book (June 2015 - May 2016) East Flowing Rivers Basin Vol.I, Stream Flow & Suspended Sediment Data.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.9	**Basin: East Flowing Rivers from Pennar to Kanyakumari**									
2.9.6	**Vaigai :** Rises in Western slopes of Varusha- nadu Hills near Kottaimalai in Madurai Distt. of Tamil Nadu at an elevation of 1200 m. Length 258 Km.	Tamil Nadu	7741	Manjalar	375	9-17 to	77-23	25 to 35	635 to	
				Suruliyar	1210	09-32			1270	
				Varahanadi	380					
				Others	5776					
		Total	**7741**	**Total**	**7741**					
2.9.7	**Vaippar :**Rises on the Eastern slopes of the Varushandu Hill ranges of Western ghat near Sivagiri in Thirunelveli Distt. in Tamil Nadu at an elevation of 900 m. Length 125 Km.	Tamil Nadu	5069							-
		Total	**5069**							
2.9.8	**Thambraparani** Rises on Eastern slopes of Westernghat near Alwarkurichi village in Thirunelveli Distt. of Tamil Nadu at an elevation of 1400 m. Length 130 Km.	Tamil Nadu	5482	Chittar		8 - 46	77 - 15			
				Manimuthar						
		Total	**5482**							
2.9.9	**Varahanadi** originated from northern parts of Pakkammalai Hills at an elevation of 5660m past of Gingee Taluk. Length 78.5 Km.	Tamil Nadu	2564			11 - 59	79 - 40			

Source : Water Year Book (June 2015 - May 2016) East Flowing Rivers Basin Vol.I, Stream Flow & Suspended Sediment Data.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.9	**Basin: East Flowing Rivers from Pennar to Kanyakumari**									
2.9.6	**Vaigai**	GDQ= 1 GDSQ = 2			71 Parmakudi (6796)		Vaigai Reservoir	194.78		
2.9.7	**Vaippar**	GDQ=1			36 Irrukkankudi (3721)			-	-	-
2.9.8	**Thambraparani**	GDQ = 1 GDSQ=1			1015 Murappandu (4380)			-	-	-
2.9.9	**Varahanadi**	GDQ=1 **Total= 17**			377 Kumarapalayam (2208)	Granulite Magnetitequartzite Charnockite				

Source : Water Year Book (June 2015 - May 2016) East Flowing Rivers Basin Vol.I, Stream Flow & Suspended Sediment Data.

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.10 /2.11	**Basin: Narmada**									
2.10	**Narmada** Originates from Amarkantak of Shehdol Distt. Of Madhya Pradesh at an elevation of 1057m Length 1312 Km	Madhya Pradesh Maharashtra Gujarat	85859 1538 11399	Burhner Hiran Tawa Chhota Tawa Kundi Orsand Others	4228 4795 6338 5055 3973 3946 70461	21°20' to 23°45'	72°32' to 81°45'	Max.4.5 to 49	596 to 1623	Lower Zone 12 to 28 In winter upper and middle Zone 1 to 3
		Total	**98796**	**Total**	**98796**					
2.11	**Basin: Tapi**									
2.11	**Tapi** Rises from Near Multai in Betul Distt. of Madhya Pradesh at an elevation of 752 m. Length 724 Km.	Madhya Pradesh Maharashtra Gujarat	9804 51504 3837	Tapi(Main) Gomai Arunavati Buray Panjhra Bori Aner Girna Waghur Purna	22522 1148 935 1419 3257 2580 1702 10061 2592 18929	20° 05' to 22° 03'	72° 38' to 78° 17'	Max: 21.3° C to 45.2° C Min: 32.9° C to 8.7° C	863.5	
		Total	**65145**	**Total**	**65145**					

Source : Water Year Book of Tapi & Narmada Basin for year 2015-2016

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.10 /2.11	**Basin: Narmada**									
2.10	**Narmada**	GD= 1 GDQ = 7 GDSQ= 11 **Total =19**	Bauxite, Clay, Coal, Dolomite, Graphite, Iron Ore Manganese Talc & Lime Stone	There few large scale & Medium scale industries are low as compare with other Basins	29836 MCM inception to 2009-10 Garudeshwar Catchment Area 87892 Sq. Kms.	Shallow Black, Medium Black, Medium Deep Black, Mixed Red & black Sandy, Loam	Karjan	630.00	-	-
							Sardar Sarover	9460.00	5760	19371.67
							Jobat	77.84	70.04	52.82
							Man	145.03	127.87	114.73
							Upper Beda	91.82	76.24	on going
							Maheshwar	-	-	on going
							Narmada Sagar (ISP)	12220.00	9750.00	18477.41
							Sukta (Bhagwant Sagar)	89.30	78.00	78.96
							Kotar	270.00	265.00	183.36
							Tawa	2310.00	2050.00	1337.73
							Barna	539.00	455.80	283.50
							Bargi (Rani Avanti Bai P)	3920.00	3180.00	2029.90
							Matiyari	56.80	51.10	26.50
							Onkareshwar	987.00	299.00	18766.90
2.11	**Basin: Tapi**									
2.11	**Tapi**	G = 13 GD = 1 GDS = 1 GDQ = 1 GDSQ = 4 RF = 1 **Total= 21**	Coal	Paper Mills Sugar Mills Cotton Spinning Mills Dal Miils Oil Mills Wood Cutting Mills	**Burhanpur:** 5,192 MCM 8,487 Sq. Km. **Sarangkheda:** 3,852 MCM 58,400 Sq. Km.	Shallow Black Medium Black Black Cotton Light Brown to Redish Brown Dark Yellow & Redish	Hathnur Dam	388.00	255.00	
							Girna Dam	608.45	523.55	
							Ukai Dam	8,510	7,092	

Source : Water Year Book of Tapi & Narmada Basin for year 2015-16

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.12	**Basin: West Flowing Rivers from Tapi to Tadri**									
2.12.1	**Ulhas -** Rises from Sahyadri Hills in Raigad Distt. of Maharashtra at an elevation of 600 m. Length 122 Km.	Maharashtra	4637	Pej Bhalla Barvi Salpe		18-44 to 19-42	72-45 to 73-48	12.4 to 38.9	2943	
		Total	**4637**	Bhivapuri						
2.12.2	**Kal -** Rises from Sahyadri Hills in Raigad Distt. of Maharashtra at an elevation of 652 m. Length 40 Km.	Maharashtra	670			18-05 to 18-25	73-10 to 73-13		2795	
		Total	**670**							
2.12.3	**Kajvi -** Rises in the Vishal Ghat region of Sahayadri Hills. Length-N.A.	Maharashtra	315							
		Total	**315**							
2.12.4	**Gad -** Rises from Sahayadri Hills, ranges in Sindhudurg Distt.of Maharashtra at an elevation of 600 m. Length 66 Km.	Maharashtra	890			16-0 to 16-20	73-30 to 74-00		2600	
		Total	**890**							
2.12.5	**Mandovi -** Rises in the Jamboti Ghat in Karnataka at an elevation of 600 m Length 62 Km.	Goa	1550	Sarang Mahainada Udel		15-15 to 15-40	73-15 to 73-45	9.3 to 42.6	3484	
		Total	**1550**							
2.12.6	**Aghanashini -** Rises from Western Ghat of Karnataka at an elevation 676 m. Length 117 Km.	Karnataka	1350					20 to 32.7	2028 to 5465	
		Total	**1350**							

Source : Water Year Book (June 2015 - May 2016) West Flowing Rivers Basin Vol.- I, Stream Flow & Suspended Sediment Data.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.12	**Basin: West Flowing Rivers from Tapi to Tadri**									
2.12.1	**Ulhas**	G = 9 GD =11 GDQ = 5 GDSQ = 3 RF = 4 **Total = 32**			1723 Badlapur (785)					
2.12.2	**Kal**				751 Mangaon (259)		Kal			
2.12.3	**Kajvi**				552 Anjanari (315)	Sandy Mixed With Gravel				
2.12.4	**Gad**				1052 Belne Bridge (605)					
2.12.5	**Mandovi**				4702 Ganjim (880)		Anjunem			
2.12.6	**Aghanashini**				1596 Santeguli (1090)					

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Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.13	**Basin: West Flowing Rivers from Tadri to Kanyakumari**									
2.13.1	**Haladi (Varahi) -** Rises near Someswara in the reserved forest of Karnataka at an elevation of 870 m. Length 70 Km.	Karnataka	761					21.7 to 32.4	5516	
		Total	**761**							
2.13.2	**Swarna (Yennehole) -** Rises fromWestern Ghat of Dakshin Kannada Distt. Length 61 Km.	Karnataka	165					21.7 to 32.4	4436	
		Total	**165**							
2.13.3	**Netravati -** Rises between Kudermukh of Ballalaryan Durga in Dakshina Kannada Distt. of Karnataka at an elevation of 1000 m. Length 103 Km.	Karnataka	3657	Kumaradhara			75-20	16 to 42	2002 to 5277	-
		Total	**3657**							
2.13.4	**Payaswani -** Originate from Pattighat reserved forest in Coorg Distt. of Karnataka at an elevation of 1350 m. Length 105 Km.	Karnataka	581				-	-	-	-
		Kerala	957							
		Total	**1538**							
2.13.5	**Valapatanam -** Rises from South of Ammatti Village in the Distt. of Coorg of Karnatak at an elevation of 900 m. Length 101 Km.	Karnataka	546			12-13	75-52	22 to 32.9	2369 to 4268	-
		Kerala	1321							
		Total	**1867**							

Source : Water Year Book (June 2015 - May 2016) West Flowing Rivers Basin Vol.- I, Stream Flow & Suspended Sediment Data.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.13	**Basin: West Flowing Rivers from Tadri to Kanyakumari**									
2.13.1	**Haladi**	GDQ=1			1570 Haladi (583)					
2.13.2	**Swarna**	GDQ=1			1235 Yennehole (327)		Proposed Dam Site	370.95	108.65	
2.13.3	**Netravathi**	GDSQ=1			7070 Bantwal (3184)			-	-	-
2.13.4	**Payaswani**	GDSQ=1			1765 Erinjipuzha (957)			-	-	-
2.13.5	**Valapatanam**	GDSQ=1			2466 Perumannu (1070)		Kattampally	-	-	-

Source : Water Year Book (June 2015- May 2016) West Flowing Rivers Basin Vol.- I, Stream Flow & Suspended Sediment Data.

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.13	**Basin: West Flowing Rivers from Tadri to Kanyakumari**									
2.13.6	**Chaliyar (Beypore)**Rises from Elambalari Hills in Kerala State at an elevation of 2067 m. Length 169 Km.	Kerala Tamil Nadu **Total**	2545 388 **2933**	Cherupuzha Vadapurampuzha Iringipuzha Chaliyarpuzha		-	-	25.8 to 29.4	1289 to 5042	-
2.13.7	**Kadalundi(Karmpuzha/Oruvanpuramppuzha)** Rises from East of Karuvarukkundu Village in Calicut Distt. in Kerala at an elevation of 900 m. Length 130 Km.	Kerala **Total**	1112 **1112**			11-18	76-15	25.8 to 29.4	1289 to 5042	-
2.13.8	**Bharathapuzha (Ponnani/Aliyar/Kannadipuzha)**Rises in the Eastern slopes of Anamalai Hills of Western Ghat in Tamil Nadu at an elevation of 2250 m. Length 209 Km.	Tamil Nadu Kerala **Total**	1786 4400 **6186**	Palar Kalpathipuzha Gayathripuzha Pulanthode		10-26 to 11-13	75-53 to 77-13	22.2 to 37.4	2000 to 3000	-
2.13.9	**Chalakudi** Rises from Anamalai Hills of Western Ghat Length 130 Km.	Kerala Tamil Nadu **Total**	1404 300 **1704**			-	-	25.9 to 28.7	1494 to 4588	-
2.13.10	**Periyar -** Rises at the forest Sivagiri Peak 80 Km. South of Devikulam at an elevation of 2438 m. Length 244 Km.	Kerala Tamil Nadu **Total**	5284 114 **5398**	Edamala				25.9 to 28.7	Good Rainfall Max.8656	-

Source : Water Year Book (June 2015 - May 2016) West Flowing Rivers Basin Vol.- I, Stream Flow & Suspended Sediment Data.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.13	**Basin: West Flowing Rivers from Tadri to Kanyakumari**									
2.13.6	**Chaliyar (Beypore)**	GDSQ= 1			2542 Kuniyil (1876)			-	-	-
2.13.7	**Kadalundi**	GDSQ=1			815 Karathodu (750)			-	-	-
2.13.8	**Bharathapuzha**	GDSQ= 3 GDQ = 2			2848 Kumbidi (5755)		Malampuzha Res. Tirumurthi Aliayar	228.40	226.96	-
2.13.9	**Chalakudi**	GDSQ=1			1509 Arangaly (1342)		Chalakudi River Diversion Scheme Sholayar H.E.S. Peringilkuthu Left Bank Scheme	443.50	299.50	-
2.13.10	**Periyar**	GDSQ=2 GDQ= 1			5043 Neeleshwaram (4234)		Periyarvalley Project Edamalayar Idukky Hydel Project	453.50 1089.80 1996.30	299.35 1017.80 1489.50	- 1824.00 2027.90

Source : Water Year Book (June 2015 - May 2016) West Flowing Rivers Basin Vol.- I, Stream Flow & Suspended Sediment Data.

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				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.13	**Basin: West Flowing Rivers from Tadri to Kanyakumari**									
2.13.11	**Muvattupuzha -** Rises from the East of Erattupetta village in Distt. Of Kottayam in Kerala State at an evelation of 1200 m Length 121 Km.	Kerala	1554	Thodupuzha Aar Kaliyar Kothmangalam Aar		9-43	76-53	25.9 to 28.7	2779 to 4526	-
		Total	**1554**							
2.13.12	**Meenachil River** in the Distt. Kottayam of Originate at East of Errattupata Kerala State at an evalation 900 m. Length 78 Km.	Kerala	1272	Kadapuzha Aar Karipadthode Trikovil Aar Poonzan Aar		9-40	76-52	26.2 to 29.4	2420 to 4686	-
		Total	**1272**							
2.13.13	**Pamba -** Rises in the Peermedu Plateau at an elevation 1670 m. Length 176 Km.	Kerala	2235	Kaki Aar		-	-	22.6 to 32.7	2276 to 4275	-
		Total	**2235**							
2.13.14	**Achankovil -** Rises from South of the Devermalai in the Quillon Distt. of Kerala State at an elevation of 1500 m. length 128 km. 1500 m. Length 128 Km.	Kerala	1484			09-10	77-15	26.1 to 29.1	2520	-
		Total	**1484**							
2.13.15	**Kallada -** Rises in Papanasam range South of Kulathupuzha in Quillon Distt. of Kerala State at an elevation of 900 m. length 121 km. 900 m.Length 121 Km.	Kerala	1699			-	-	26.1 to 29.1	2225 to 4038	-
		Total	**1699**							
2.13.16	**Vamanapuram** - Originates in the Chemunji Motai at an elevation of 1860 m. Length 88 Km.	Kerala	687			-	-	26.2 to 28.8	1836 to 4651	-
		Total	**687**							

Source : Water Year Book (June 2015 - May 2016) West Flowing Rivers Basin Vol.- I, Stream Flow & Suspended Sediment Data.

(Contd.)

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.13	**Basin: West Flowing Rivers from Tadri to Kanyakumari**									
2.13.11	**Muvattupuzha**	GDSQ=1			4008 Ramamangalam (1208)			-	-	-
2.13.12	**Meenachil River**	GDSQ=1			1192 Kidangoor (615)			-	-	-
2.13.13	**Pamba**	GDSQ=2			2921 Malakkara (1713)		Pamba Hydel Project	487.30	471.68	1046.80
2.13.14	**Achankovil**	GDSQ=1			809 Thumpamon (810)			-	-	-
2.13.15	**Kallada**	GDSQ=1			1068 Pattazhy (1210)		Kalada Irrigation Project	524	507	-
2.13.16	**Vamanapuram**	GDSQ=1			507 Ayilm (540)			-	-	-
2.13.17	**Other rivers viz. Sita, Gurpur etc.**	GDQ = 5 **Total= 28**								

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Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.14	**Basin: Mahi**									
2.14	**Mahi** Rises from Near village Sardarpur in Dhar Distt. of Madhya Pradesh at an elevation of 500 m. Length 583 Km.	Madhya Pradesh Rajasthan Gujarat **Total**	6695 16453 11694 **34,842**	Som Anas Panam Others **Total**	8707 5604 2470 18061 **34842**	21^{0} 46' to 24^{0} 30' N	72^{0} 21' to 75^{0} 59' E	min.tem varies from 4 to 14 max.temp varies from 44 to 46	748.1	3.5

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.14	**Basin: Mahi**									
2.14	**Mahi** **Origin-Northern** slopes of Vindhayas Altitude-500 m Length-583 km	G= 6 GD= 2 GDQ = 1 GDSQ= 4 **Total = 13**	Phyllites, gneisses Quartzite & Granite	Engg., Handicraft, Stonework, Cement, Chemical, Liquier, Sugar, Tex and Wools etc.	4509 till 2013-14 khanpur (32,510 Sq km CA	Deep and medium black alluvial soil, red-yellow	Mahi Bajaj Sagar Dam kadana Dam Panam Dam Jakham Machhan nalla Wanakbori Weir Jaisamand Hadaf kabutary Bhadar Umaria Edalwada Somkamla Amba Dam	2180.00 1542.00 735.80 141.90 37.91 41.88 414.60 32.26 9.58 46.72 13.53 11.53 126.06	1712.00 1203.00 679.20 131.60 29.16 36.22 296.10 25.02 8.07 40.06 11.67 10.50 125.83	information not available

Source : Water Year Book of Mahi, Sabarmati and Other West Flowing Rivers. Basin for year 2015-16

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (Centigrade) (^{o}C)	Average Annual Rainfall (mm)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.15	**Basin: Sabarmati**									
2.15	**Sabarmati** Originates in Aravali Hills in Rajasthan at an elevation of 762 m. Length 371 Km.	Rajasthan Gujarat **Total**	4124 17550 **21,674**	Sei Wakal Harnav Hathamati Watrak	946 1625 972 1526 8638	22^{0} 15' to 24^{0} 47'	70^{0} 58' to 73^{0} 51'	Min temp varies from 3.5 to 18 Max.Temp varies from 40 to 46.	775.7	No observation by CWC

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.15	**Basin: Sabarmati**									
2.15	**Sabarmati**	G=7 GD= 5 GDQ= 1 **Total = 13**	Phyllites, gneisses Quartzite & Granite	Engg., Handicraft, Stonework, Cement, Chemical, Liquier, Sugar, Tex and Wools etc.	2626 till (2013-14) Voutha (19636 Sq. Km. CA)	Deep and medium black alluvial soil, red-yellow	Sei Dam Dharoi Dam Hanav-II Guhai Hathamati Meshwo Mazam Watrak Dam Waidy Raska Weir Moti Fatewadi Vasna Barrage	31.34 907.88 21.67 62.34 161.00 82.00 43.86 176.90 13.60	24.16 731.99 19.97 57.04 153.00 77.00 36.58 154.30 12.30	 information not available

Source : Water Year Book of Mahi, Sabarmati and Other West Flowing Rivers. Basin for year 2015-16

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (^{o}C)	Average Annual rainfall (MM)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.16	**Basin: West flowing rivers of Kutch and Saurashtra including Luni**									
2.16.1	**Luni** Western Slope of Aravali Hills near Ajmer in Rajasthan at an elevation of 772 m. Length 511 Km.	Rajasthan	32879	Jojari(Mithri)	1060	24-11 to 26-43	70-37 to 74-39	Min temp varies from 5 to 7.5 Max.Temp varies from 46.4 to 48	295.2	No observation by CWC
				Lolari	1611					
				Guhiya &	4126					
				Sukri (Hemavas)	3016					
				Bandi (Hemavas)	3280					
				Sukari	2637					
				Mithri	2701					
				Jawai	2671					
				Khari Bandhi	1161					
		Total	**32,879**	Sugi	1370					
2.16.2	**Banas** Rises from village Pindwara of Sirohi Distt. in Rajasthan at an elevation of 372.51 m. Length 266 Km.	Rajasthan	3269	Sipu	1420	23-30 to 24-55	71-15 to 73-15	Min temp varies from 5 to 8 Max.Temp varies from 40 to 44.5	728.4	No observation by CWC
		Gujarat	5405	Sukli	438					
				Batria	218					
				Sewaram	202					
				Suket	79					
				Balaram	345					
		Total	**8,674**	Khari	1391					
2.16.3	**Shetrunji** Originates at Chchai Hills in Gir Forest of Junagarh Distt.of Gujarat at an elevation of 380 m. Length 182 Km.	Gujarat	5514	Satali	651	21-00 to 21-47	70-50 to 72-10	Min temp varies from 12 to 31 Max.Temp varies from 19 to 42	662	No observation by CWC
				Theli	484					
				Safara	226					
				Shel	303					
				Gagaria	754					
				Kharai	665					
				Kharo	261					
				Rajwal	321					
		Total	**5514**	Talaji	134					

Cont…..

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Name of the Basin (Origin, Altitude & Length of the River)	State	Drainage Area (Sq.Km)	Principal Tributries & their Catchment Area		Basin Location		Climate Details		
				Tributary	Area (Sq.Km)	Latitude (a^{o}-$b^{'}$)	Longitute (x^{o}-$y^{'}$)	Temprature Variation (^{o}C)	Average Annual rainfall (MM)	Evapo-ration (mm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.16.4	**Bhadar** Rises from Near Vaddi village of Rajkot Distt. of Gujarat at an elevation of 261 m. Length 198 Km.	Gujarat	7094	Vasavadi Gondali Surwa Galolio Chappervadi Phopal Utawali Moj Venu **Total**	583 513.85 273.6 198.25 455.4 590.5 103.6 105.15 953.12 **7094**	21-25 to 22-10	69-45 to 71-20	Min temp varies from 8 to 10 Max.Temp varies from 26 to 44	580.2	No observation by CWC
2.16.5	**Machhu** Rises from near village Khokhara in Surendra Nagar Distt. of Gujarat at an elevation of 220 m. Length 142 Km.	Gujarat	2515	Beti Jampuri Bania Machhori Asoi Maha **Total**	235.69 119.14 113.96 140.62 197.84 507.64 **2515**	22-10 to 23-10	70-40 to 71-15	Min temp varies from 4 to 11 Max.Temp varies from 24 to 41	253	No observaton by CWC
2.16.6	**Rupen** Originate -Taranga hills near Kheralu Taluka of Mehasana District Altitude-180m Length-156km	Gujarat	2500	Khari Pushpavati Khari (Right) **Total**	180 446 170 **2500**	23-25 to 24-00	71-30 to 72-46	Min temp varies from 8 to 16 Max.Temp varies from 18 to 39	597	No observation by CWC

Source : Water Year Book of Mahi, Sabarmati and Other West Flowing Rivers. Basin for year 2015-16

Table 2 : Salient Features of Different River Basins during 2015-16

Sl. No.	Basin Name	Number of Hydrological Observation Site	Principal Minerals	Major Industries	Average Annual Runoff (MCM) (at terminal Site with Catchment Area)	Soil Characteristics	Major Projects			
							Name	Gross Storage (MCM)	Live Storage (MCM)	Water withdrawal (MCM)
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
2.16	**Basin: West flowing rivers of Kutch and Saurashtra including Luni**									
2.16.1	**Luni** Origin- Aravalli Hills Altitude- 772m Length -511km	G = 4 GD = 5 GDQ = 2 GDSQ = 3 RF= 1	details not available	details not available	239.24 till 2013-14 Gandhav (32010 sq.km)	Saline and deseart,red-yellow	Jawai Dam Jaswant Sagar Dam Hemawas Sardar Samand Banki bund	198.00 52.80 62.50 88.00 48.60	184.00 52.60 62.50 88.00 34.50	information not available
2.16.2	**Banas** Originates - Aravalli hills Altitude-372.5m Length-266lm	**Total = 15**	details not available	details not available	321 till 2013-14 Kamalpur (6960 sq.km)	Alluvial saline, red-yellow	Swaroopganj Dam Dantiwada Dam Sipu Dam	39.05 464.00 177.80	- 444.00 156.00	information not available
2.16.3	**Shetrunji** Originates - Chchai hills in Gir forest Altitude - 380m Length- 182 km		details not available	details not available	275 till 2013-14 lowara (3953 sq. km.)	Deep and mediumblack ,alluvial	Shetrunji Irrigation Scheme	350.00	309.00	information not available
2.16.4	**Bhader** Originate-Vaddi about 26km N-W of Jasdan in Rajkot District Altitude- 261 m Length-198km		details not available	details not available	456 till 2013-14 Ganod 6266 sq.km	Deep and mediumblack ,alluvial	Bhadar Irrigation Scheme	238.00	221.00	information not available
2.16.5	**Machhu** Originate-Hills of Jasdan near village Khokhara in Chotila Taluka of Surendranagar Altitude-220m Length-142 km		details not available	details not available	182 till 2013-14 Gungan 2137 sq.km	Red-yellow ,alluvial	Machhu - 1 Machhu - 2	70.80 100.55	- -	information not available
2.16.6	**Rupen** Originate -Taranga hills near Kheralu Tq of Mehasana District Altitude-180m Length-156km		Not available	details not available	72 till 2013-14 Sapawada 2125 sq.km	Saline, alluvial	-	-		information not available

Source : Water Year Book of Mahi, Sabarmati and Other West Flowing Rivers. Basin for year 2015-16

Table 3 : Basin-wise Details of Hydrological Observations Sites as on 30.09.2019

Sl. No.	Basin Name	Number and Type of Sites							Total no. of Sites
		Guage (G), Discharge(D), Water Quality(Q), Sediment(S), Snow Gauge and Metrological Site(SG&Met)							
(1)	(2)	(3)							(4)
		G	GD	GQ	GDS	GDQ	GDSQ	SG&Met.	
1	**Mahanadi**	28	2	-		1	20	5	56
2	**Suberanrekha, Burhabalang**	8	2	6	-	1	-	-	17
3	**Brahmani & Baitarni**	11	-	-	-	-	14	1	26
4	**Godavari**	37	46	2	1	7	36	3	132
5	**Krishna**	18	18	-	-	7	28	9	80
6	**Cauvery**	-	25	-	-	16	25	-	66
7	**Pennar**	-	5	-	-	4	4	-	13
8	**East Flowing River from Mahanadi to Pennar**	14	1	-	-	-	5	-	20
9	**East Flowing River from Pennar to Kanya Kumari**	-	13	-	-	11	8	-	32
10	**Narmada**	18	35	-	-	7	11	2	73
11	**Tapi**	22	19	-	1	1	5	7	55
12	**West Flowing River from Tapi to Tadri**	7	8	-	-	4	3	3	25
13	**West Flowing River from Tadri to Kanya Kumari**	-	12	-	-	8	26	-	46
14	**Mahi**	7	3	-	-	1	3	-	14
15	**Sabarmati**	7	3	-	-	2	1	-	13
16	**West Flowing Rivers from Kutch & Saurashtra including Luni**	4	5	-	-	2	3	-	14
17	**Ganga/ Brahmaputra/Meghna/ Barak Basin**	352	243	24	35	39	154	37	884
18	**Indus Basin**	32	14	0	5	3	6	37	97
19	**Area of Inland Drainage in Rajasthan Desert**	-	-	-	-	-	-	-	0
20	**MinorRivers Draining Myanmar(Burma) and Bangladesh**	5	-	-	5	-	1	-	11

Source : RDC-2 Directorate CWC

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

I Basin : Mahanadi

Sl. No.	Site Name	Drainage Area (Km^2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Baronda	3225	20°54'45"	81°53'10"	283.00	289.33	18/09/1980	2015 - 2016	06/12/1977	29/06/1980	02/06/1980
2	Rajim	8760	20°58'00"	81°52'30"	275.00	282.68	30/08/1994	2015 - 2016	-	04/12/1972	01/09/1972
3	Seorinarayan	48050	21°43'00"	82°35'30"	209.50	224.31	30/08/2003	2015 - 2016	09/12/1985	11/02/2013	01/06/2015
4	Basantpur	57780	21°43'18"	82°47'27"	206.00	219.32	20/09/1980	2015 - 2016	11/05/1971	01/09/1972	01/09/1972
5	Gunderdehi	-	20°57'11"	81°16'45"	292.00	296.63	08/09/23014	2015 - 2016	15/07/2013	-	-
6	Kotni	6990	21°13'02"	81°14'19"	268.00	279.61	12/07/1994	2015 - 2016	30/09/1978	25/07/2014	01/06/2015
7	Pathardih	2511	21°20'28"	81°35'48"	271.00	279.63	01/07/2007	2015 - 2016	05/06/1989	-	01/06/1995
8	Simga	30761	21°37'33"	81°41'36"	244.00	257.59	13/07/1994	2015 - 2016	-	30/12/1972	01/09/1972
9	Andhiarkhore	2210	21°47'00"	81°36'30"	252.00	258.93	09/08/1979	2015 - 2016	-	12/07/1980	01/06/1980
10	Ghatora	3035	22°02'04"	82°13'34"	246.00	253.50	21/07/1994	2015 - 2016	17/09/1979	01/11/2000	01/11/1991
11	Jondhra	29645	21°43'00"	82°20'34"	219.00	230.57	14/07/1994	2015 - 2016	21/07/1979	11/10/1980	02/06/1980
12	Rampur	2920	21°39'57"	82°31'30"	219.00	229.66	29/08/2003	2015 - 2016	-	05/07/1976	15/01/1972
13	Manendragarh	1100	23°12'10"	82°12' 54"	411.00	420.44	12/07/1990	2015 - 2016	21/06/1989	09/07/1993	01/10/1992
14	Bamnidhi	9730	21°53'55"	82°42'29"	223.00	228.88	22/08/1975	2015 - 2016	18/02/1971	01/01/1973	01/09/1972
15	Kurubhata	4625	21°59'15"	83°12'15"	215.00	220.28	18/07/1995	2015 - 2016	01/04/1978	22/07/1980	01/07/1980
16	Sundergarh	5870	22°06'55"	84°00'40"	214.00	222.60	23/06/1996	2015 - 2016	30/12/1977	21/07/1980	02/06/1980
17	Salebhata	4650	20°59'00"	83°32'22"	130.00	139.58	29/08/2003	2015 - 2016	-	01/05/1973	15/09/1972
18	Kesinga	11960	20°11'51"	83°13'30"	166.00	178.50	04/07/2006	2015 - 2016	07/11/1978	22/09/2006	01/06/2001
19	Kantamal	19600	20°39'00"	83°43'55"	118.00	132.70	19/09/2008	2015 - 2016	26/08/1971	22/07/1976	01/01/1972
20	Tikarapara	124450	20°38'00"	84°37'08"	50.00	74.57	10/09/2011	2015 - 2016	28/05/1972	01/06/1973	01/12/1972

Source : Water Year Book (June 2015 to May 2016) Mahanadi Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

II Basin : Subernarekha

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Muri	1330	22°48'56"	86°12'47"	231.00	237.500	24/09/2006	2015 - 2016	01/11/1989	-	01/05/1991
2	Adityapur	6309	22°47'29"	86°10'06"	125.00	137.560	20/08/1975	2015 - 2016	22/11/1971	06/02/1975	01/01/1976
3	Jamshedpur	12649	22°47'00"	86°12'00"	111.00	126.255	.03/09/1973	2015 - 2016	01/02/1972	27/11/1972	01/09/1972
4	Ghatsila	14176	22°34'49"	86°20°08	72.00	85.050	17/08/1974	2015 - 2016	16/03/1971	30/12/1972	01/09/1972
5	Jamsholaghat	16000	22°13'08"	86°43'00"	42.32	51.720	24/09/2011	2015 - 2016	6/16/2004	-	-
6	Fekoghat	700	22°18'28"	86°55° 11"	41.48	50.00	06/07/2007	2015 - 2016	18/06/1988	-	-
7	Rajghat	18260	21°46'04"	87°09'51"	5.79	11.920	29/07/2015	2015 - 2016	-	-	-
8	Gopiballavpur	-	22°12'12'	86°05'20"	31.50	38.500	29/07/2015	2015 - 2016	15/09/2014	-	-
9	Govindpur	4495	21°32'52"	86°55'14"	0.00	8.900	31/10/1999	2015 - 2016	07/03/1992	21/03/2003	01/05/2003

Source: Water Year Book (June 2015 to May 2016) Baitarani, Subernarekha & Burhabalang Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

III Basin : Brahmani & Baitarani

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Tilga	3160	22°20'00"	84°30'00"	372.000	378.625	28/08/1987	2015 - 2016	15/06/1979	21/07/1980	01/06/1980
2	Jaraikela	9160	22°19'08"	85°06'19"	185.000	194.010	06/08/1997	2015 - 2016	01/08/1972	01/06/1975	01/09/1975
3	Panposh	19448	22°16'19"	84°51'07"	170.500	181.440	24/09/2011	2015 - 2016	21/06/1996	01/08/1996	01/11/1990
4	Gomlai	21950	21°50'16"	84°56'33"	135.000	147.270	20/08/2007	2015 - 2016	21/01/1979	17/07/1980	17/07/1980
5	Jenapur	33955	20°53'23"	86°00'51"	13.000	23.730	26/09/2011	2015 - 2016	20/07/1979	09/07/1980	01/03/1980
6	Altuma	830	20°55'48"	85°31'20"	44.000	50.150	21/07/2009	2015 - 2016	25/07/1990	-	-
7	Anandpur	8570	21°12'34"	86°07'23"	28.000	68.140	18/06/2008	2015 - 2016	07/03/1972	01/06/1972	01/09/1972
8	Champua	1710	22°03'57"	85°40'56"	367.00	378.950	23/09/2011	2015 - 2016	20/07/1990	09/08/2001	08/09/2001

Source: Water Year Book (June 2015 to May 2016) Brahmani Basin

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

IV Basin : Godavari

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Polavaram	307800	17°15'07"	81°38'53"	10.897	28.017	16/08/1986	2015-16	01/01/1966	25/10/1966	25/10/1966
2	Bhadrachalam	280505	17°40'05"	80°52'47"	32.610	50.960	03/08/2013	2015-16	11/07/2007	-	03/10/2006
3	Konta	19550	17°47'56"	81°23'18"	30.430	49.910	17/08/1986	2015-16	28/10/1965	01/01/1968	05/05/1968
4	Potteru (Seasonal)	1120	18°11'23"	81°47'52"	120.500	131.990	04/08/2006	2015-16	20/05/1997	-	-
5	Saradaput	3047	18°36'00"	82°08'00"	225.465	239.530	04/08/2006	2015-16	05/09/1970	-	-
6	Sangam	1565	17°35'50"	80°49'40"	53.000	58.250	21/09/2005	2015-16	24/08/1996	-	-
7	Perur	268200	18°35'14"	80°26'10"	83.000	87.420	15/08/1986	2015-16	17/09/1965	24/02/1968	24/10/1968
8	Pathagudem	40000	18°49'00"	80°21'00"	85.750	103.500	05/08/2006	2015-16	20/07/1964	21/07/1965	01/01/1972
9	Tumnar	1700	19°00'30"	81°14'20"	315.007	325.977	14/06/2004	2015-16	09/12/1991	-	-
10	Chindnar	17270	19°05'00"	81°18'00"	327.150	340.100	05/07/2006	2015-16	07/12/1971	-	-
11	Cherribeda	890	19°38'23"	81°29'07"	564.400	573.900	04/07/2006	2015-16	13/11/1996	-	-
12	Ambabal	1968	19°17'00"	81°47'20"	534.000	542.450	05/07/2006	2015-16	30/10/1993	-	-
13	Sonarpal	1523	19°16'00"	81°52'00"	534.356	542.570	04/07/2006	2015-16	05/12/1991	-	-
14	Jagdalpur	7380	19°06'30"	82°01'30"	544.595	544.551	15/08/1986	2015-16	21/09/1965	21/09/1965	01/12/1979
15	Kosagumda	1635	19°16'37"	82°14'00"	547.000	556.150	20/08/2001	2015-16	13/11/1996	-	-
16	Murthahandi	-	19°03'00"	82°17'00"	533.600	545.090	06/08/2010	2015-16	01/12/1988	-	-
17	Nowrangpur	3545	19°12'00"	82°31'00"	550.716	560.636	29/07/1969	2015-16	20/06/1971	21/06/1971	01/01/1972
18	Tekra	108780	18°58'42"	79°56'49"	95.090	114.600	15/08/1986	2015-16	15/07/1964	01/07/1965	15/06/1966
19	Bhatpalli	3100	19°19'50"	79°30'14"	156.000	168.500	02/10/1988	2015-16	01/10/1986	07/10/1988	04/01/1988
20	Sirpur (Sakmur)	47500	19°33'41"	79°36'48"	148.500	161.950	08/08/2006	2015-16	01/02/1968	06/01/2014	06/01/2014
21	Bamni	46020	19°48'53"	79°22'46"	157.970	176.320	15/08/1986	2015-16	16/10/1965	13/12/1965	03/06/1966

Contd.,

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

IV Basin : Godavari

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
22	P.G.Bridge	18441	19°49'03"	78°34'40"	198.630	217.920	07/08/2006	2015 - 2016	21/07/1965	19/10/1965	31/05/1966
23	Mangrul	2500	20°11'19"	77°59'12"	279.375	290.375	26/08/2002	2015 - 2016	09/11/1992	-	-
24	Kanergaon	3515	19°57'40"	77°08'53"	465.015	477.345	07/08/2006	2015 - 2016	20/07/1992	-	-
25	Nandgaon	4580	20°32'00"	78°49'33"	198.000	212.550	13/07/1994	2015 - 2016	21/07/1986	13/07/1988	01/01/1988
26	Hivra	10240	20°32'52"	78°19'30"	230.000	246.310	07/09/1994	2015 - 2016	11/08/1987	26/06/1990	16/12/1987
27	Ashti	50990	19°41'12"	79°47'13"	141.420	155.100	13/07/1994	2015 - 2016	14/07/1965	14/03/1966	01/06/1966
28	Rajoli	1900	20°11'37"	79°39'59"	229.000	239.615	14/08/1986	2015 - 2016	25/06/1986	-	-
29	Wairagarh	2600	20°25'19"	80°05'30"	208.705	215.905	07/08/2007	2015 - 2016	07/08/1992	-	01/10/2014
30	Salebardi	1800	20°54'44"	79°55'40"	224.300	233.520	15/09/2005	2015 - 2016	21/06/1986	-	-
31	Satrapur	11100	21°13'00"	79°13'59"	264.300	277.610	06/09/1994	2015 - 2016	30/05/1986	01/08/1988	09/12/1987
32	RamaKona	2500	21°43'12"	78°49'27"	338.000	349.500	30/07/1991	2015 - 2016	21/11/1986	12/11/2014	01/06/2014
33	Rajegaon	5380	21°37'32"	80°15'14"	272.000	284.260	23/07/2014	2015 - 2016	26/07/1986	27/08/2014	01/02/2012
34	Kumhari	8070	21°53'03"	80°10'36"	289.000	304.335	18/08/2002	2015 - 2016	01/12/1986	01/09/2014	01/02/2012
35	Keolari	2970	22°22'50"	79°54'00"	425.000	440.500	21/07/1994	2015 - 2016	29/06/1987	-	01/06/2014
36	Somanpally (Seasonal)	12691	18°37'12"	79°48'12"	121.444	127.344	24/07/1989	2015 - 2016	17/03/1967	-	-
37	Mancherial	102900	18°50'08"	79°27'00"	124.316	137.846	12/08/1983	2015 - 2016	03/07/1964	01/07/1965	01/12/1979
38	Gandlapet	1360	18°49'16"	78°26'17"	312.000	317.900	30/08/1990	2015 - 2016	10/09/1986	-	31/07/1988
39	Betmogrra	2105	18°42'18"	77°32'42"	347.500	356.200	16/10/2005	2015 - 2016	03/07/1997	-	15/07/1997
40	Degloor	1900	18°33'43"	77°34'56"	352.000	363.850	24/08/2000	2015 - 2016	17/07/1987	01/01/1994	15/09/1988
41	Saigaon	9960	18°04'33"	77°03'09"	542.723	554.443	17/08/1990	2015 - 2016	10/11/1967	19/07/1973	16/08/1973
42	Yelli	53630	19°02'00"	77°28'00"	334.300	354.200	07/08/2006	2015 - 2016	22/04/1978	01/06/1978	01/07/1978
43	Purna	15000	19°10'33"	77°02'00"	358.000	371.800	27/07/2005	2015 - 2016	02/09/1969	10/10/1972	01/11/1972
44	Zari	5550	19°23'43"	76°46'15"	373.000	385.710	27/07/2005	2015 - 2016	18/06/1987	-	01/08/1988
45	G.R.Bridge	33934	19°01'20"	76°43'45"	364.000	378.370	14/08/2006	2015 - 2016	19/06/1976	01/07/1976	01/07/1976
46	Dhalegaon	30840	19°13'13"	76°21'52"	386.575	399.855	13/08/2006	2015 - 2016	16/08/1964	11/07/1971	01/07/1972
47	Pachegaon	5800	19°32'07"	74°50'01"	475.000	481.580	26/08/1997	2015 - 2016	23/07/1983	-	-
48	Kiwaibalenga	910	19°38'30"	81°33'45"	562.000	572.000	22/07/2014	2015 - 2016	29/08/2005	-	-

Source : Water Year Book (June 2015 to May 2016) Godavari Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

V Basin : Krishna

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Vijayawada	251360	16°30'04"	80°37'30"	8.690	19.272	06/10/2009	2015 - 2016	24/03/1964	01/02/1965	01/01/1972
2	Keesara	9854	16°42'53"	80°19'13"	28.585	36.810	20/05/1969	2015 - 2016	26/06/1964	02/07/1965	01/01/1972
3	Madhira	1850	16°55'05"	80°21'32"	44.500	50.820	21/09/2005	2015 - 2016	07/06/1984	01/03/2014	01/06/1992
4	Paleru Bridge	2928	16°56'56"	80°02'57'	73.232	78.447	24/07/1989	2015 - 2016	01/07/1964	01/03/2014	01/06/1992
5	Wadenapally	235544	16°47'39"	80°04'23"	22.054	42.484	05/10/2009	2015 - 2016	10/12/1965	01/12/1966	01/01/1972
6	Dameracherla	11501	16°44'21"	79°40'11"	56.000	62.500	05/10/2009	2015 - 2016	27/07/1968	02/09/2013	01/01/1980
7	Halia	3100	16°47'25"	79°20'19"	129.000	133.507	22/09/1991	2015 - 2016	11/07/1984	-	01/06/1992
8	Doddipadu	2340	15°44'24"	77°59'35"	286.383	-	-	2015 - 2016	18/11/2014	-	-
9	Bawapuram	67180	15°52'57"	77°57'26"	271.825	281.585	02/10/2009	2015 - 2016	01/04/1964	01/06/1965	01/01/1972
10	Mantralayam	60630	15°56'43"	77°25'38"	308.340	318.770	02/10/2009	2015 - 2016	01/06/1972	26/07/1977	01/08/1977
11	T.Ramapuram (Seasonal)	23500	15°39'40"	76°57'56"	349.368	355.948	02/10/2009	2015 - 2016	23/08/1964	-	01/01/1980
12	Kellodu	4320	13°45'15"	76°19'11"	647.750	650.250	13/11/2010	2015 - 2016	11/07/1990	-	01/07/1994
13	Hoovinahole	2585	13°58'57"	76°44'57"	93.500	95.820	06/09/2008	2015 - 2016	02/10/2001	-	01/06/2008
14	Marol	4901	14°56'20"	75°37'05"	507.551	517.459	18/11/1992	2015 - 2016	01/02/1966	16/09/1972	01/02/1973
15	Haralahalli	14582	14°49'50"	75°40'33"	507.436	518.109	18/11/1992	2015 - 2016	13/12/1966	01/11/1972	01/11/1972
16	Byladahalli	2300	14°26'02"	75°46'47"	530.400	537.433	17/11/1992	2015 - 2016	11/06/1985	10/12/1997	02/06/1986
17	Kuppelur	1850	14°30'00"	75°38'02"	533.400	541.840	08/08/2007	2015 - 2016	21/07/1990	23/07/2014	01/07/1994
18	Honnali	7075	14°14'14"	75°39'45"	533.900	546.400	16/07/1994	2015 - 2016	06/06/1980	15/09/1995	02/06/1986
19	Shimoga	2831	13°55'37"	75°35'06"	556.500	567.910	02/08/2014	2015 - 2016	22/01/1972	14/09/1972	01/01/1973
20	Holehonnur	2990	13°58'34"	75°41'07"	88.500	561.985	03/08/2013	2015 - 2016	01/07/2003	-	01/07/2003
21	Yadgir	69863	16°44'15"	77°07'31"	350.503	361.873	07/09/1969	2015 - 2016	11/11/1964	01/06/1965	01/01/1972
22	Malkhed	7650	17°12'12"	77°09'23"	390.000	398.270	15/10/1998	2015 - 2016	15/08/1990	08/09/1992	01/06/1992
23	Wadakbal	12092	17°32'03"	75°53'06"	418.883	428.538	29/09/1989	2015 - 2016	06/08/1964	01/06/1965	01/09/1972
24	Takli	33916	17°24'51"	75°50'52"	410.778	423.653	12/08/2006	2015 - 2016	01/06/1965	01/12/1966	01/09/1972
25	Narsingpur	22856	17°58'17"	75°08'21"	448.243	462.383	10/08/2006	2015 - 2016	22/02/1966	-	-
26	Sarati	7200	17°54'43"	75°00'27"	468.128	476.089	02/08/1976	2015 - 2016	01/06/1965	01/06/1966	01/09/1972
27	Phulgaon (Seasonal)	2205	18°40'01"	74°00'08"	537.000	545.000	30/08/2011	2015 - 2016	20/06/1992	-	02/08/1993
28	Huvinhedigi	55150	16°29'25"	76°55'23"	342.240	357.840	02/10/2009	2015 - 2016	01/02/1976	01/06/1976	01/02/1976
29	Talikot (Seasonal)	2486	16°29'01"	76°17'03"	496.000	501.215	26/08/2010	2015 - 2016	21/09/1995	-	-
30	Cholachagudda (Seasonal)	9373	15°52'43"	75°43'16"	522.500	536.610	02/10/2009	2015 - 2016	01/06/1982	01/06/1982	01/06/1982
31	Gokak Falls (Seasonal)	2770	16°11'24"	74°47'29"	536.004	546.514	16/07/1994	2015 - 2016	14/07/1971	27/12/2014	01/09/2014
32	Sadalga (Seasonal)	2322	16°33'44"	74°31'42"	526.160	538.950	29/06/1983	2015 - 2016	24/06/1969	-	-
33	Terwad (Seasonal)	2425	16°40'31"	74°34'30"	520.000	540.390	06/08/2005	2015 - 2016	22/08/1979	-	-
34	Kurundwad	15190	16°41'01"	74°36'11"	519.455	539.750	06/08/2005	2015 - 2016	26/06/1972	06/08/2003	01/07/2003
35	Arjunwad (Seasonal)	12660	16°46'51"	74°37'59"	523.225	543.680	05/08/2005	2015 - 2016	12/01/1969	26/12/2014	01/09/2014
36	Samdoli (Seasonal)	1948	16°51'18"	74°29'50"	529.594	546.324	05/08/2005	2015 - 2016	01/12/1964	26/12/2014	01/09/2014
37	Karad	5462	17°17'40"	74°11'25"	549.962	566.075	30/07/2006	2015 - 2016	21/06/1965	22/06/1965	01/09/1972
38	Warunji	1890	17°16'20"	74°09'54"	550.937	566.937	30/07/2006	2015 - 2016	01/01/1966	01/06/1974	01/06/1974

Source : Water Year Book (June 2015 to May 2016) Krishna Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

VI Basin : Cauvery

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Gopurajapuram	-	10°51'05"	79°48'00"	13.000	3.240	08/11/2005	2015 - 2016	01/02/1999	-	01/10/2005
2	Annavasal	-	10°58'30"	79°45'14"	4.250	5.985	24/11/1999	2015 - 2016	01/02/1999	-	01/09/2005
3	Nallathur	-	11°00'08"	79°45'01"	0.000	5.665	28/11/2008	2015 - 2016	01/06/2006	-	01/09/2008
4	Menangudi	-	10°56'56"	79°42'14"	4.280	7.940	10/11/1997	2015 - 2016	21/08/1996	-	01/09/2005
5	Porakudi	-	10°54'14"	79°42'26"	3.000	7.200	28/11/2008	2015 - 2016	01/02/1999	-	01/09/2005
6	Peralam	-	10°57'59"	79°39'41"	6.000	9.835	27/11/2008	2015 - 2016	01/02/1999	-	01/09/2005
7	Thengudi	-	10°55'00"	79°38'20"	5.000	9.620	28/11/2008	2015 - 2016	02/07/1997	07/11/2003	01/09/2005
8	Musiri	66243	10°56'36"	78°26'06"	82.000	86.650	25/10/2005	2015 - 2016	01/06/1972	31/03/1973	01/06/1978
9	Nallamaranpatty	9080	10°52'51"	77°59'05"	129.000	134.850	19/11/1979	2015 - 2016	23/01/1978	10/12/1978	16/08/1978
10	Elunuthimangalam	3386	11°01'54"	77°53'15"	129.000	132.050	24/10/1999	2015 - 2016	07/08/1998	01/03/2013	03/10/2000
11	Kodumudi	53233	11°04'52"	77°53'25"	121.570	127.830	25/10/2005	2015 - 2016	21/06/1971	11/07/1972	01/06/1978
12	Savandapur	5776	11°31'17"	77°30'36"	180.000	186.878	20/11/1979	2015 - 2016	17/07/1978	24/04/1979	02/04/1979
13	Thengumarahada	1370	11°34'22"	76°55'09"	336.650	341.650	16/07/2009	2015 - 2016	01/06/1979	01/06/2002	01/.06/1979
14	Gandhavayal	90.71	11°22'27"	76°59'32"	92.000	95.150	24/11/2013	2016 - 2016	15/03/2013	-	01/04/2013
15	Nellithurai	1475	11°17'16"	76°53'28"	301.000	308.250	23/07/1989	2015 - 2016	01/06/1979	01/07/2002	01/06/1979
16	Urachikottai	44100	11°28'40"	77°42'00"	155.000	165.830	06/07/1980	2015 - 2016	01/06/1979	04/01/2001	01/06/1979
17	Thevur	1248	11°31'38"	77°45'03"	168.000	173.200	27/10/2010	2015 - 2016	24/09/1999	-	01/10/2001
18	Sevanur	258	11°33'07"	77°43'55"	170.000	172.380	13/10/2009	2015 - 2016	20/09/1999	-	01/10/2001
19	Thoppur	362	11°56'18"	78°03'26"	320.000	325.810	24/11/2005	2015 - 2016	21/10/1999	-	01/11/2001
20	Kudlur	709	11°50'26"	77°27'46"	433.000	438.555	19/04/2001	2015 - 2016	06/03/1999	01/03/2013	02/02/2001
21	Hogenakkal	1636	12°07'16"	77°46'55	252.000	256.350	24/10/2005	2015 - 2016	05/10/1996	-	01/11/2004
22	Billigundulu	36682	12°10'56"	77°43'26"	255.000	265.560	30/07/1991	2015 - 2016	30/08/1971	01/06/1972	01/06/1978
23	T.Bekuppe	3500	12°30'29"	77°25'39"	604.000	606.700	12/07/2004	2015 - 2016	24/11/2003	26/03/2013	01/12/2003
24	T.K.Halli	7890	12°25'00"	77°11'33"	580.000	585.925	03/10/1984	2015 - 2016	12/06/1978	01/06/1985	02/06/1979
25	Kollegal	21082	12°11'21"	77°06'00"	622.000	629.750	29/07/1991	2015 - 2016	06/02/1971	15/03/1972	01/06/1978
26	Bendrahalli	1900	12°09'13"	77°04'48"	631.000	635.200	07/11/2010	2015 - 2016	18/08/2005	-	01/04/2008
27	T.Narasipur	7000	12°13'48"	76°53'39"	635.000	643.187	29/07/1991	2015 - 2016	12/03/1971	20/03/1972	01/06/1978
28	Muthankera	1260	11°48'30"	76°05'02"	705.000	712.737	22/06/1992	2015 - 2016	01/06/1973	15/02/1974	01/06/1978
29	K.M.Vadi	1330	12°20'46"	76°17'16"	766.500	772.190	04/07/1980	2015 - 2016	26/06/1979	-	01/07/1979
30	Akkihebbal	5236	12°36'10"	76°24'03"	745.000	752.380	03/08/2013	2015 - 2016	23/01/2002	26/03/2013	02/09/2002
31	M.H.Halli	3050	12°49'08"	76°08'00"	838.000	846.477	28/07/1991	2015 - 2016	16/10/1978	01/06/1994	01/07/1980
32	Thimmanahalli	1010	12°58'57"	76°02'17"	902.425	909.665	16/07/2009	2015 - 2016	29/06/2000	-	02/09/2002
33	Sakleshpur	617	12°56'37"	75°47'37"	882.470	892.970	16/07/2009	2015 - 2016	05/04/2002	26/03/2013	02/09/2002
34	Chunchunkatte	2995	12°30'34"	76°18'04"	748.000	757.180	19/07/2009	2015 - 2016	19/07/2008	-	03/10/2008
35	Kudige	1934	12°30'09"	75°57'40"	809.000	820.410	03/07/1980	2015 - 2016	01/11/1973	01/11/1973	01/06/1978

Source : Water Year Book (June 2015 to May 2016) Cauvery Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

VII Basin : Pennar

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Marella	7681	15°52'55"	79°54'36"	95.000	101.420	21/05/2010	2015 - 2016	28/06/2007	01/08/2007	01/09/2007
2	Nellore	50800	14°28'13"	79°59'20"	43.500	51.215	18/11/1991	2015 - 2016	28/08/1987	21/06/2014	01/09/1988
3	Nandipalli	2486	14°43'16"	79°01'08"	95.000	102.430	19/10/1996	2015 - 2016	18/06/1990	12/06/2013	01/06/1994
4	Chennur	37981	14°34'20"	78°48'00"	115.805	123.375	24/08/2000	2015 - 2016	13/07/1989	08/08/1989	01/09/1989
5	Kamalapuram	7187	14°35'30"	78°41'00"	135.650	139.200	20/10/1996	2015 - 2016	16/06/1990	-	01/06/1994
6	Nandalur	5183	14°15'17"	79°06'59"	133.000	Dry Bed	01/06/2014	2016 - 2016	21/03/2013	-	-
7	Alladupalli	8758	14°43'02"	78°40'07"	132.955	142.085	24/06/2007	2015 - 2016	21/08/1985	11/07/1996	01/07/1987
8	Singavaram	6262	14°35'52"	78°00'48"	256.465	260.355	12/09/1988	2015 - 2016	25/09/1979	-	15/09/1981
9	Tadipattri	12482	14°55'19"	78°00'59"	227.500	230.340	04/11/1975	2015 - 2016	12/12/1971	-	01/09/1979
10	Nagalamedike	5050	14°11'20"	77°22'20"	544.550	549.545	12/09/1988	2015 - 2016	17/07/1978	-	01/06/1980

Source: Water Year Book (June 2015 to May 2016) East Flowing Rivers Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

VIII Basin : East Flowing Rivers from Mahanadi to Pennar

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Marella	7681	15°52'55"	79°54'36"	95.000	101.420	21/05/2010	2015 - 2016	28/06/2007	01/08/2007	01/09/2007
2	Gunupur	6740	19°05'00"	83°49'00"	80.250	85.950	07/08/2007	2015 - 2016	01/06/2001	15/11/2013	30/12/2013
3	Kashi Nagar	7820	18°50'49"	83°57'04"	51.000	57.850	07/08/2007	2015 - 2016	28/04/1971	13/10/1972	01/09/1972
4	Purushottampur	7112	19°31'00"	84°53'00"	12.000	18.640	25/10/2013	2015 - 2016	14/06/1989	15/01/2001	08/10/2001
5	Srikakulam	9500	18°18'48"	83°53'18"	6.650	14.085	04/08/2006	2015 - 2016	25/08/1990	27/06/2001	27/06/2001
6	Anakapalli	2090	17°41'00"	83°01'08"	20.400	27.480	04/11/2012	2015 - 2016	16/08/1989	-	-

Source: Water Year Book (June 2015 to May 2016) East Flowing Rivers Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

IX Basin : East Flowing Rivers from Pennar to Kanyakumari

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Naidupeta	2650	13°56'54"	79°53'46"	42.000	44.340	26/11/1979	2015 - 2016	01/12/1978	22/10/2013	01/12/1980
2	Sulurpet	5927	13°42'28"	80°00'36"	13.000	19.235	15/11/1991	2015 - 2016	05/10/1988	23/10/2013	01/12/1988
3	Chengalpet	16230	12°39'00"	79°56'50"	26.000	29.220	14/11/1985	2015 - 2016	01/10/1978	-	01/06/1979
4	Magaral	1803	12°42'34"	79°44'57"	58.000	62.280	16/12/1996	2015 - 2016	25/11/1971	-	01/11/1983
5	Arcot	10174	12°54'50"	79°20'00"	159.000	161.047	18/11/1991	2015 - 2016	20/09/1979	-	01/06/1988
6	Avarankuppam	3300	12°41'03"	78°32'22"	365.275	368.450	11/09/1981	2015 - 2016	07/06/1978	-	01/08/1979
7	Kumarapalayam	2208	11°59'00"	79°40'50"	8.825	13.120	31/12/2011	2015 - 2016	02/11/2004	-	12/12/2005
8	Villupuram	12900	11°52'14"	79°27'34"	43.000	45.700	13/11/1977	2015 - 2016	09/10/1972	-	01/01/1987
9	Vazhavachanur	10780	12°03'57"	78°58'41"	133.000	138.782	17/11/1991	2015 - 2016	21/07/1978	19/10/2001	01/08/1978
10	Gummanur	4620	12°33'18"	78°08'18"	490.000	495.600	24/10/2005	2015 - 2016	20/09/1978	26/08/1981	20/09/1978
11	Kudalaiyathur	7890	11°25'20"	79°28'15"	41.000	48.892	05/12/1993	2015 - 2016	15/11/1989	-	01/06/1993
12	Paramakudi	6796	09°33'12"	78°35'11"	38.000	41.385	20/11/1979	2015 - 2016	03/11/1971	01/03/2013	05/11/1989
13	Theni	1200	10°00'04'	77°29'06"	281.650	287.950	19/11/1979	2015 - 2016	01/06/1978	29/01/1979	15/07/1978
14	Ambasamudram	850	09°55'32'	77°30'42"	296.500	298.900	08/11/2009	2015 - 2016	05/01/1999	09/10/2002	01/08/1999
15	Irrukkankudi	3721	09°19'27"	77°59'26"	46.000	51.000	14/12/1998	2015 - 2016	25/11/1989	-	01/06/1993
16	Murappanadu	4380	08°42'52"	77°50'06"	14.025	21.350	14/11/1992	2015 - 2016	23/11/1977	15/02/1979	15/08/1978
17	A.P.Puram	1095	08°54'05'	77°38'55"	63.000	67.823	14/11/1992	2015 - 2016	01/12/1979	-	01/06/1993

Source: Water Year Book (June 2015 to May 2016) East Flowing Rivers Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

X Basin : Narmada

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Chandwada	3846	22°01'48"	73°25'30"	18.000	33.550	07/09/1994	2015 - 2016	01/11/1979	01/08/1988	15/03/1980
2	Gurudeshwar	87892	21°53'00"	73°39'00"	10.000	39.780	07/09/1994	2015 - 2016	23/03/1972	21/03/1973	15/06/1977
3	Pati	2151	21°56'37"	74°44'42"	187.000	195.850	05/08/2001	2015 - 2016	15/06/2008	-	01/07/2008
4	Dhulsar	787	22°12'20"	74°51'06"	151.000	155.100	08/09/2014	2015 - 2016	15/06/2008	-	01/08/2008
5	Mandleshwar	72809	22°10'18"	75°39'39"	138.000	157.230	06/09/1994	2015 - 2016	28/08/1971	14/04/1972	18/06/1979
6	Kogaon	3919	22°06'06"	75°41'02"	151.000	161.850	03/09/2002	2015 - 2016	01/07/1978	-	15/09/1986
7	Handia	54027	22°29'25"	76°59'37"	258.000	274.150	24/08/2013	2015 - 2016	26/04/1977	11/12/1977	01/08/1979
8	Chhidgaon	1729	22°24'21"	77°18'28"	287.000	301.810	08/07/2007	2015 - 2016	22/12/1976	-	16/09/1986
9	Hoshangabad	44548	22°45'21"	77°43'58"	282.000	300.805	20/08/1974	2015 - 2016	16/09/1972	29/12/1972	15/07/1979
10	Sandia	33953.5	22°54'57"	78°20'51"	297.000	316.890	19/09/1999	2015 - 2016	18/04/1978	09/08/1978	15/09/1979
11	Gadarwara	2270	22°55'26"	78°47'20"	321.000	332.470	18/09/1999	2015 - 2016	01/02/1977	15/06/1978	16/08/1979
12	Barmanghat	26453	23°01'52"	79°00'56"	306.000	330.455	30/08/1973	2015 - 2016	20/11/1971	27/08/1972	01/06/1979
13	Belkheri	1508	22°55'40"	79°20'23"	340.000	359.950	21/07/1994	2015 - 2016	16/03/1977	-	01/09/1986
14	Patan	3950	23°18'42"	79°39'46"	341.500	356.800	06/07/2005	2015 - 2016	30/08/1979	-	01/09/1986
15	Bamni	1864	22°29'06"	80°22'58"	440.000	446.930	15/09/2005	2015 - 2016	30/11/1999	01/07/2002	01/07/2002
16	Mohgaon	3919	22°45'57"	80°37'22"	447.000	467.300	08/08/2004	2015 - 2016	13/01/1977	27/08/1992	16/09/1986
17	Manot	4667	22°44'08"	80°30'44"	442.000	459.650	18/08/1984	2015 - 2016	16/12/1976	09/11/1979	01/01/1980
18	Dindori	2292	22°56'53"	81°04'34"	660.000	669.640	23/08/1991	2015 - 2016	01/08/1988	-	15/03/1990
19	Bijora	14561	22°55'30"	79°55'30"	366.000	380.500	08/08/2011	2015 - 2016	01/06/1967	01/06/1980	-

Source : Water Year Book (June 2015 to May 2016) Narmada Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

XI Basin : Tapi

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Burhanpur	8487	21°17'12"	76°30'18"	213.000	239.500	29/08/1978	2015 - 2016	14/09/1972	23/12/1972	01/06/1977
2	Gopalkheda	9500	20°52'35"	76°59'14"	236.000	252.100	10/08/1979	2015 - 2016	17/02/1977	30/07/1979	01/08/1979
3	Yerli	16517	20°56'11"	76°28'27"	213.000	233.540	07/08/2006	2015 - 2016	01/03/1972	09/04/1973	01/06/1977
4	Gidhade	54750	21°17'45"	74°48'45"	119.000	141.650	08/08/2006	2015 - 2016	19/06/1990	-	01/09/1990
5	Sarangkheda	58400	21°25'55"	74°31'37"	108.000	126.000	08/08/2006	2015 - 2016	19/10/1977	13/07/1984	01/01/1980
6	Dedtalai	3860	21° 30'47"	76° 45'26"	270.000	277.750	06/08/2015	2015 - 2016	06/02/2014	24/01/1984	01/08/1979

Source : Water Year Book (June 2015 to May 2016) Tapi Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

XII Basin : West Flowing Rivers from Tapi to Tadri

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Badalapur	785	19°09'44"	73°15'16"	9.017	21.097	27/07/2005	2015 - 2016	27/06/1981	22/12/2014	02/07/1993
2	Pen	125	18°44'12"	73°06'39"	7.000	14.730	25/07/2005	2015 - 2016	17/09/1996	-	-
3	Nagothane	420	18°31'09"	73°09'23"	2.000	12.420	16/07/1999	2015 - 2016	25/09/1996	-	-
4	Mangaon (Seasonal)	259	18°13'53"	73°17'01"	3.905	10.255	24/07/1989	2015 - 2016	27/06/1980	-	02/07/1993
5	Anjanari	315	16°56'04"	73°30'50"	11.000	18.810	03/07/2013	2015 - 2016	08/08/1991	-	-
6	Belne Bridge	605	16°13'18"	73°36'40"	8.500	18.380	29/07/2010	2015 - 2016	16/06/2000	-	03/07/2000
7	Ganjim	880	15°28'16"	74°05'58"	0.000	12.510	29/07/1982	2015 - 2016	20/01/1979	-	-
8	Collem	117	15°20'20"	74°14'55"	65.000	71.550	10/08/2008	2015 - 2016	15/12/1979	-	-
9	Santeguli	1090	14°26'04"	74°35'20"	8.000	18.370	17/07/2011	2015 - 2016	09/06/1988	-	01/09/1993

Source: Water Year Book (June 2015 to May 2016) West Flowing Rivers Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Haladi	583	13°34'54"	74°51'28"	15.115	21.666	09/08/1986	2015 - 2016	30/12/1985	-	01/09/1993
2	Avershe	253	13°31'17"	74°52'48"	88.000	95.670	02/08/2005	2015 - 2016	25/06/2002	-	02/09/2002
3	Yennehole	327	13°17'39"	74°58'51"	15.000	24.650	06/07/2009	2015 - 2016	24/07/1989	-	01/09/1993
4	Addoor	688	12°55'44"	74°57'14"	10.000	15.480	04/08/2004	2015 - 2016	17/07/2003	-	02/09/2002
5	Bantwal	3184	12°52'51"	75°02'28"	1.000	12.650	26/07/1974	2015 - 2016	01/11/1970	22/06/1972	15/06/1978
6	Erinjipuzha	957	12°29'45"	75°09'25"	9.100	18.790	18/07/1999	2015 - 2016	25/06/1985	13/06/1988	01/07/1988
7	Perumannu	1070	11°58'51"	75°34'40"	3.470	14.690	07/08/2012	2015 - 2016	26/06/1985	26/07/1986	02/06/1986
8	Kuttyadi	238	11°39'03"	75°45'30"	0.000	7.790	18/07/2009	2015 - 2016	13/03/2000	01/06/2013	01/10/2002
9	Kuniyil	1876	11°14'22"	76°01'24"	3.300	12.530	18/08/1981	2015 - 2016	04/01/1979	21/01/1979	15/01/1979
10	Karathodu	750	11°03'25"	76°02'22"	89.000	93.615	09/07/1987	2015 - 2016	20/06/1986	22/06/1989	01/12/1988
11	Kumbidi	5755	10°51'16"	76°01'12"	4.000	9.610	27/06/1985	2015 - 2016	08/01/1979	24/06/1980	03/12/1979
12	Pulamanthole	940	10°53'53"	76°11'31"	84.500	90.145	09/08/1986	2015 - 2016	17/02/1986	28/08/1986	02/06/1986
13	Mankara	2775	10°45'40"	76°29'10"	45.830	50.971	14/11/1992	2015 - 2016	21/06/1985	24/09/2013	02/06/1986
14	Pudur	1313	10°46'39"	76°30'44"	58.285	64.930	08/11/2009	2015 - 2016	02/09/1985	01/10/2013	02/06/1986
15	Ambarampalayam	950	10°37'53"	76°56'46"	217.000	224.780	08/11/2009	2015 - 2016	09/03/1978	01/08/2002	01/08/1978
16	Arangaly	1342	10°17'10"	76°19'20"	0.000	7.580	27/06/1985	2015 - 2016	27/04/1978	08/07/1980	01/08/1978
17	Neeleswaram	4234	10°11'01"	76°29'44"	1.000	9.750	25/06/1971	2015 - 2016	16/03/1971	26/09/1972	15/06/1978
18	Vandiperiyar	712	09°34'24"	77°05'26"	789.000	793.620	27/07/2005	2015 - 2016	07/06/2000	-	01/10/2002
19	Ramamangalam	1208	09°56'37"	76°28'42"	0.000	8.300	28/06/1985	2015 - 2016	25/04/1978	20/02/1979	15/08/1978
20	Kalampur	405	09°59'26"	76°37'56"	89.535	94.955	26/08/1987	2015 - 2016	23/06/1986	01/06/1988	01/06/1988
21	Kidangoor	615	09°40'30"	76°36'10"	-1.184	7.900	03/08/1994	2015 - 2016	02/07/1985	01/06/1987	02/06/1986
22	Kallooppara	731	09°24'13"	76°39'01"	0.000	9.050	03/08/1994	2015 - 2016	19/06/1985	19/05/1986	02/06/1986
23	Malakkara	1713	09°19'57"	76°39'47"	-1.000	7.790	10/07/2001	2015 - 2016	19/06/1985	18/06/1986	01/07/1986
24	Thumpamon	810	09°13'30"	76°42'52"	5.000	13.735	07/11/1978	2015 - 2016	28/01/1978	23/03/1981	15/10/1978
25	Pattazhy	1210	09°04'22"	76°45'40"	3.000	13.702	15/11/1992	2015 - 2016	20/04/1978	25/09/1980	15/10/1978
26	Ayilam	540	08°42'54"	76°51'00"	0.000	10.367	10/10/1992	2015 - 2016	18/12/1978	26/12/1978	02/01/1979
27	Kuzhithurai	841	08°18'21"	77°11'50"	0.000	8.830	08/12/2010	2015 - 2016	01/11/2000	-	02/12/2002
28	Ashramam	258	08°09'33"	77°27'32"	1.000	5.675	09/12/2010	2015 - 2016	21/09/1999	-	02/12/2002

Source: Water Year Book (June 2015 to May 2016) West Flowing Rivers Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

XIV Basin : Mahi

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Khanpur	32510	22°31'55"N	73°08'27"E	8.220	26.820	12/08/2006	2015 - 2016	21/12/1978	01/05/1988	01/01/1979
2	Chakaliya	3121	23°02'58"N	74°19'14"E	215.000	226.900	11/08/2006	2015 - 2016	13/02/1991	-	-
3	Paderdibadi	16247	23°46'02"N	74°08'12"E	131.000	147.525	19/08/2006	2015 - 2016	24/06/1978	21/07/1980	01/07/1978
4	Rangeli	8329	23°52'22"N	74°13'25"E	150.000	158.240	19/08/2006	2015 - 2016	15/07/1978	-	01/07/1988
5	Dhariawad	1510	24°04'43"N	74°28'02"E	203.000	209.350	11/08/2006	2015 - 2016	01/06/1988	-	-
6	Mataji	3880	23°20'57"N	74°43'31"E	295.000	307.000	04/10/1988	2015 - 2016	21/07/1982	21/07/1982	21/07/1982

Source: Water Year Book (June 2015 to May 2016) Mahi, Sabarmati & Others West Flowing Rivers Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

XV Basin : Sabarmati

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Voutha	19636	22°38'59"N	72°32'08"E	12.000	20.660	10/07/2007	2015 - 2016	24/06/2000	-	01/01/2000
2	Kheda	7550	22°44'45"N	72°40'49"E	19.750	28.200	25/08/1990	2015 - 2016	10/07/1989	-	-
3	Ratanpur(Gadvel)	2916	22°58'31"N	72°53'02"E	39.100	44.980	12/08/2006	2015 - 2016	11/07/1989	-	-
4	Derol Bridge	6724	23°34'24"N	72°48'25"E	89.000	94.730	20/08/1994	2015 - 2016	01/06/1991	25/09/1992	15/07/1992
5	Kheroj	3650	24°13'45"N	73°00'26"E	211.680	215.450	19/08/2006	2015 - 2016	22/06/1992	-	-
6	Kotra(Jotasan)	1421	24°21'20"N	73°10'05"E	285.000	291.550	20/08/2006	2015 - 2016	14/06/1995	-	-

Source: Water Year Book (June 2015 to May 2016) Mahi, Sabarmati & Others West Flowing Rivers Basin.

Table 4 : Important Historical Observations by sites and River Basin during 2015-2016

XVI Basin : WFR of Kutch, Saurashtra Including Luni

Sl. No.	Site Name	Drainage Area (Km2)	Latitude	Longitude	Zero of Gauge (m)	Stage Record		Reference Period	Date of Establishment		
						Peak Water Level (m)	Date of Occurrence		Discharge	Sediment	Water Quality
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Gandhav	32010	24°59'22"N	71°40'47"E	31.000	38.880	19/07/1979	**2015 - 2016**	24/06/1974	-	-
2	Balotra	19000	25°49'19"N	72°13'23"E	102.000	107.150	06/07/1990	**2015 - 2016**	05/07/1990	-	-
3	Kamalpur	6960	23°47'59"N	71°45'00"E	34.000	38.010	08/09/1992	**2015 - 2016**	25/07/1971	25/08/1973	01/06/1977
4	Chitrasani	345	24°17'20"N	72°29'54"E	184.000	188.100	29/07/2015	**2015 - 2016**	01/06/1990	-	15/07/1988
5	Sarotry	2200	24°22'04"N	72°32'48"E	186.000	190.780	08/09/1992	**2015 - 2016**	01/06/1990	-	-
6	Abu Road	1600	24°29'38"N	72°47'30"E	254.850	258.397	08/09/1992	**2015 - 2016**	01/06/1990	-	01/07/1988
7	Lowara	3953	21°26'36"N	71°33'42"E	56.000	66.930	09/11/1982	**2015 - 2016**	29/11/1970	25/07/1973	01/07/1977
8	Ganod	6266	21°39'53"N	70°10'52"E	26.000	34.100	22/06/1983	**2015 - 2016**	14/11/1970	07/07/1973	01/07/1973
9	Gungan	2137	22°57'42"N	70°45'52"E	8.000	16.000	24/06/1997	**2015 - 2016**	09/12/1970	-	-
10	Sapawada	2125	23°32'54"N	72°00'52"E	36.650	43.000	27/06/1997	**2015 - 2016**	31/08/1989	-	-
11	Una	395.01	20°49'42"	71°02'51"	15.500	16.925	04/09/2014	**2015 - 2016**	26/07/2014	-	-

Source: Water Year Book (June 2015 to May 2016) Mahi, Sabarmati & Others West Flowing Rivers Basin.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

I Basin : Mahanadi **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Andhiarkhore	Monsoon	213	199	84	34	217	292	201	517	459	91
		Non-Monsoon	6	9	2	1	9	13	13	33	31	13
		Annual	219	208	86	35	226	305	214	550	490	104
2	Bamnidhi	Monsoon	2309	1993	1486	896	1328	4164	2126	1785	3166	1005
		Non-Monsoon	863	443	316	170	174	165	239	305	255	280
		Annual	3172	2436	1802	1066	1502	4329	2365	2090	3421	1285
3	Baronda	Monsoon	1960	2871	1822	627	1853	799	912	1514	1210	401
		Non-Monsoon	7	8	3	2	10	1	1	1	3	1
		Annual	1967	2879	1825	629	1863	800	913	1515	1213	402
4	Basantpur	Monsoon	22784	24210	12754	14251	19539	22030	20306	24287	26650	6779
		Non-Monsoon	1386	680	739	350	486	634	753	696	517	426
		Annual	24170	24890	13493	14601	20025	22664	21059	24982	27167	7205
5	Ghatora	Monsoon	503	645	496	224	395	1091	889	793	911	707
		Non-Monsoon	5	9	4	0	1	0	0	37	34	15
		Annual	508	654	500	224	396	1091	889	831	945	722
6	Jondhra	Monsoon	7451	10156	3451	4317	9213	11410	10601	17748	15622	2887
		Non-Monsoon	72	161	41	38	0	0	53	0	114	57
		Annual	7523	10317	3492	4355	9213	11410	10654	17748	15736	2944
7	Kantamal	Monsoon	19861	15324	16770	10523	9036	6305	8210	10999	13131	6229
		Non-Monsoon	1211	1430	1159	917	1240	319	1062	1548	1333	581
		Annual	21072	16754	17929	11440	10276	6624	9272	12547	14464	6810
8	Kesinga	Monsoon	13253	11117	9315	5737	6388	4416	5496	8834	9292	5128
		Non-Monsoon	1146	1271	899	594	976	268	1024	1856	1118	628
		Annual	14399	12388	10214	6331	7364	4684	6520	10690	10410	5756
9	Kotni	Monsoon	2190	2712	855	413	2346	1879	1815	4092	1931	320
		Non-Monsoon	1	16	0	0	0	0	0	0	0	0
		Annual	2191	2728	855	413	2346	1879	1815	4092	1931	320
10	Kurubhata	Monsoon	1577	1766	2051	940	1211	2867	1642	2170	1676	1776
		Non-Monsoon	37	57	49	37	53	134	46	109	55	107
		Annual	1614	1823	2100	977	1264	3001	1688	2278	1731	1883

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar.

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Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

I Basin : Mahanadi **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
11	Manendragarh	Monsoon	249	150	301	143	185	445	236	227	304	79
		Non-Monsoon	10	3	8	6	1	2	4	11	11	4
		Annual	259	153	309	149	186	447	240	237	315	84
12	Pathardih	Monsoon	1192	1125	566	739	1000	1311	995	1637	1328	450
		Non-Monsoon	7	2	0	0	1	0	0	0	0	1
		Annual	1199	1127	566	739	1000	1311	995	1637	1328	451
13	Rajim	Monsoon	4733	3998	2764	1514	3490	1982	1831	3572	3713	603
		Non-Monsoon	17	39	25	5	42	1	0	9	19	0
		Annual	4750	4037	2789	1519	3532	1983	1831	3581	3732	603
14	Rampur	Monsoon	2183	1793	1035	684	764	1249	1001	1299	1359	543
		Non-Monsoon	3	4	0	4	7	14	4	19	8	14
		Annual	2186	1797	1035	688	771	1263	1005	1318	1366	557
15	Salebhata	Monsoon	3614	1723	1963	2277	1000	2112	2876	1720	4162	829
		Non-Monsoon	22	34	15	38	8	28	29	54	24	22
		Annual	3636	1757	1978	2315	1008	2140	2905	1774	4186	851
16	Seorinarayan	Monsoon	19768	20763	10380	10394	14273	18075	16832	20838	20857	6271
		Non-Monsoon	185	220	129	163	384	415	242	450	304	362
		Annual	19953	20983	10509	10557	14657	18490	17074	21288	21161	6633
17	Simga	Monsoon	5963	7352	1998	2529	4837	5744	4419	9277	7592	2192
		Non-Monsoon	46	87	17	50	102	67	52	126	55	72
		Annual	6009	7439	2015	2579	4939	5811	4472	9403	7648	2264
18	Sundergarh	Monsoon	2147	3165	2848	2675	1809	4089	3000	2305	1962	2546
		Non-monsoon	51	89	45	68	73	124	106	147	92	90
		Annual	2198	3254	2893	2743	1882	4213	3105	2452	2053	2635
19	Tikarpara	Monsoon	56562	49920	51563	39313	33466	39915	43193	46492	63601	25090
		Non-Monsoon	5383	7967	7691	4106	5830	5311	4940	5149	4832	3846
		Annual	61945	57887	59254	43419	39296	45226	48133	51640	68433	28936

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

II Basin : Subarnarekha & Bhurhabalang **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Adityapur	Monsoon	3737	4479	3426	2174	203	3140	2089	4612	2844	1593
		Non-Monsoon	68	96	49	57	31	71	51	296	91	103
		Annual	3805	4575	3475	2231	234	3211	2140	4908	2935	1696
2	Anandpur	Monsoon	5203	8245	5038	2597	1154	6479	2579	5762	4093	1964
		Non-Monsoon	271	355	214	187	153	329	149	278	181	179
		Annual	5474	8600	5252	2784	1307	6808	2728	6040	4274	2143
3	Champua	Monsoon	1084	1611	1316	696	389	1567	702	1138	993	610
		Non-Monsoon	95	119	109	75	51	100	55	112	88	93
		Annual	1179	1730	1425	771	440	1667	757	1250	1081	702
4	Ghatsila	Monsoon	9941	11398	9580	6845	1312	12681	6105	8302	6318	2776
		Non-Monsoon	730	540	534	693	544	1194	578	711	772	714
		Annual	10671	11938	10114	7538	1856	13876	6682	9013	7090	3491
5	Govindpur	Monsoon	3518	5444	4583	3084	1687	4236	1968	6017	3434	1575
		Non-Monsoon	138	211	108	106	163	128	87	724	1157	610
		Annual	3656	5655	4691	3190	1850	4364	2055	6741	4592	2185
6	Jamshedpur	Monsoon	7944	8480	8972	4768	618	8875	4285	8897	6636	4403
		Non-Monsoon	432	239	222	554	176	387	343	287	497	254
		Annual	8376	8719	9194	5322	794	9262	4628	9184	7133	4657
7	Muri	Monsoon	660	660	697	260	63	664	358	340	253	250
		Non-Monsoon	68	51	46	30	10	27	23	50	27	7
		Annual	728	711	743	290	73	691	381	390	279	257

Source : Mananadi & Eastern Rivers Organisation, CWC, Bhubaneswar.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

III Basin : Brahamni & Baitarani **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Altuma	Monsoon	514	718	598	597	216	817	452	677	671	249
		Non-Monsoon	48	53	54	48	26	68	49	64	44	51
		Annual	562	771	652	645	242	885	501	741	716	299
2	Gomlai	Monsoon	10466	15679	13046	6108	2878	15449	7958	12689	10367	7711
		Non-Monsoon	318	434	301	201	168	431	312	671	287	294
		Annual	10784	16113	13347	6309	3046	15880	8270	13360	10654	8005
3	Jaraikela	Monsoon	4140	5573	4717	2117	987	5042	2697	2385	1292	1281
		Non-Monsoon	206	229	134	98	96	272	113	320	153	133
		Annual	4346	5802	4851	2215	1083	5314	2810	2704	1445	1413
4	Jenapur	Monsoon	12825	20287	17695	8855	3525	18484	10523	12673	14236	9043
		Non-Monsoon	1982	2249	2180	2084	1880	3423	3507	3139	1648	1717
		Annual	14807	22536	19875	10939	5405	21907	14030	15811	15883	10760
5	Panposh	Monsoon	9554	13145	11764	6378	2942	17693	9856	11008	8310	5773
		Non-Monsoon	302	435	350	233	256	501	298	700	211	338
		Annual	9856	13580	12114	6611	3198	18194	10154	11708	8521	6111
6	Tilga	Monsoon	1519	1796	1946	1577	831	2505	1830	2117	1660	985
		Non-Monsoon	69	68	41	47	68	127	82	155	92	87
		Annual	1588	1864	1987	1624	899	2632	1913	2273	1751	1073

Source : Mananadi & Eastern Rivers Organisation, CWC, Bhubaneswar.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

IV Basin : Godavari **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Ambabal at Narangi	Monsoon	1466	1100	705	472	1107	478	587	809	940	523
		Non-Monsoon	63	13	7	2	35	165	0	0	0	0
		Annual	1529	1113	712	474	1142	642	587	809	940	523
2	Betmogrra at Maner	Monsoon	210	44	15	0	211	228	9	148	30	0
		Non-Monsoon	4	5	0	0	25	8	0	10	0	0
		Annual	214	49	15	0	236	236	9	158	30	0
3	Bhadrachalam at Godavari	Monsoon		69003	47231	24199	103332	45598	70766	136197	47130	40924
		Non-Monsoon		4353	1926	1857	4849	1908	4339	6595	2725	1592
		Annual		73356	49157	26056	108181	47506	75105	142791	49856	42517
4	Cherribeda at Bardha	Monsoon	1154	930	358	366	805	306	621	939	1457	889
		Non-Monsoon	62	22	13	8	37	11	15	33	33	15
		Annual	1216	952	371	374	842	317	636	972	1490	903
5	Chindnar at Indravathi	Monsoon	14699	10371	6531	4409	11505	4640	8746	9955	10587	7519
		Non-Monsoon	725	240	123	161	582	135	257	638	340	187
		Annual	15424	10612	6654	4570	12087	4775	9003	10593	10927	7707
6	Degloor at Lendi	Monsoon	384	65	78	25	254	221	227	263	42	0
		Non-Monsoon	2	0	0	0	43	0	0	20	0	0
		Annual	386	65	78	25	297	221	227	283	42	0
7	Dhalegaon at Godavari	Monsoon	6536	882	1034	172	408	193	0	0	0	0
		Non-Monsoon	27	8	0	0	0	0	0	0	0	0
		Annual	6562	890	1034	172	408	193	0	0	0	0
8	G.R.Bridge at Godavari	Monsoon	7073	884	1048	65	698	498	231	717	220	0
		Non-Monsoon	2	72	0	0	0	0	0	55	0	0
		Annual	7075	956	1048	65	698	498	231	773	220	0
9	Gandlapet at Peddavagu	Monsoon	100	0	0	0	63	62	19	355	3	0
		Non-Monsoon	0	0	0	0	0	0	0	26	0	0
		Annual	100	0	0	0	63	62	19	381	3	0
10	Jagdalpur at Indravathi	Monsoon	3394	3024	1802	1318	2629	1160	2365	2691	2448	2217
		Non-Monsoon	138	95	66	88	211	49	40	78	34	0
		Annual	3532	3119	1868	1406	2841	1210	2405	2769	2482	2217

Source : SE, Godavari Circle, Central Water Commission, Hyderabad , Wainganga Division, Nagpur.

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Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

IV Basin : Godavari **Unit : MCM**

SN	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
11	Kiwaibalenga at Bawardhi	Monsoon			3	1	1286	468	798	1248	341	274
		Non-Monsoon	0	1	1	0	40	6	8	27	12	5
		Annual	0	1	3	1	1326	474	806	1275	353	279
12	Konta at Sabari	Monsoon	18977	14953	10010	5806	14707	7442	13296	16960	15322	13155
		Non-Monsoon	4126	4573	3023	1766	4761	2274	4385	4598	4198	3533
		Annual	23103	19526	13034	7572	19468	9716	17680	21557	19520	16688
13	Kosagumda at Bhaskal	Monsoon	1297	1266	955	571	1232	646	889	1020	1209	815
		Non-Monsoon	48	31	22		100	16	38	63	53	28
		Annual	1345	1297	977	592	1332	662	927	1083	1262	843
14	Mancherial at Godavari	Monsoon	14571	852	2104	403	9100	2381	1825	6670	767	873
		Non-Monsoon	544	258	236	61	667	266	398	820	250	251
		Annual	15115	1110	2340	464	9767	2647	2224	7489	1017	1124
15	Murthahandi at Journala	Monsoon	1541	1366	889	785	1260	781	1048	1342	1193	811
		Non-Monsoon	230	309	208	184	384	120	231	247	195	143
		Annual	1771	1676	1097	969	1645	900	1279	1589	1388	955
16	Nowrangpur at Indravathi	Monsoon	2147	1488	631	560	1006	484	854	1214	1218	731
		Non-Monsoon	95	193	144	128	220	46	64	144	94	69
		Annual	2242	1682	775	689	1225	531	917	1358	1312	800
17	Pachegaon at Pravara	Monsoon	2423	1414	950	18	178	380	54	161	69	0
		Non-Monsoon	0	0	0	0	43	0	131	98	195	135
		Annual	2423	1414	950	18	222	380	185	259	265	135
18	Pathagudem at Indravthi	Monsoon	35331	24026	18089	10942	29689	13336	25587	38360	23315	18168
		Non-Monsoon	1741	922	383	326	1482	323	742	1634	1016	413
		Annual	37072	24948	18472	11268	31172	13658	26329	39994	24331	18582
19	Perur at Godavari	Monsoon	103895	62103	39342	21815	94978	50737	77426	143249	51030	41435
		Non-Monsoon	4991	2828	1755	1534	5251	1836	3164	5847	2416	1149
		Annual	108886	64931	41097	23350	100229	52573	80590	149096	53445	42584
20	Polavaram at Godavari	Monsoon	120230	85963	54303	25805	107288	50647	82244	138191	52145	48424
		Non-Monsoon	11630	7881	4176	3218	9883	5171	9455	11682	6192	4366
		Annual	131860	93844	58479	29023	117171	55818	91698	149873	58338	52791
21	Kopergaon at Godavari	Monsoon									1150	350
		Non-Monsoon									0	167
		Annual									1150	516

Source : SE, Godavari Circle, Central Water Commission, Hyderabad, Wainganga Division, Nagpur.

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Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

IV Basin : Godavari **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
22	Potteru (Seasonal) at Potteru vagu	Monsoon	2037	2211	1176	947	1577	1311	1178	2000	1863	1340
		Non-Monsoon	1209	285	646	46	151	69	118	251	149	87
		Annual	3246	2495	1822	992	1728	1380	1297	2251	2011	1427
23	Purna at Purna	Monsoon	5524	281	343	227	1436	344	243	1303	116	67
		Non-Monsoon	74	13	0	0	130	12	0	17	0	0
		Annual	5598	294	343	227	1565	357	243	1321	116	67
24	Saigaon at Manjera	Monsoon	675	438	917	39	2282	587	56	171	9	0
		Non-Monsoon	0	0	0	0	102	0	0	0	0	0
		Annual	675	438	917	39	2384	587	56	171	9	0
25	Sangam at Murredu	Monsoon	217	157	244	21	415	143	225	196	146	244
		Non-Monsoon	30	43	27	19	82	8	58	59	17	14
		Annual	247	200	271	41	496	151	283	255	163	258
26	Saradaput at Sabari	Monsoon	6408	5868	3238	2322	4374	2841	4616	5837	4508	3444
		Non-Monsoon	1192	1266	728	426	1174	445	962	1132	895	739
		Annual	7600	7134	3965	2748	5548	3286	5577	6970	5403	4183
27	Somanpally (Seasonal) at Maner	Monsoon	1700	694	1116	114	1905	306	1060	2450	290	267
		Non-Monsoon	384	8	1	5	115	8	31	142	12	2
		Annual	2084	703	1118	119	2020	314	1091	2591	302	269
28	Sonarpal at Markandi	Monsoon	1065	794	611	482	948	342	627	737	604	570
		Non-Monsoon	43	8	18	7	50	2	10	33	8	4
		Annual	1107	803	629	489	998	344	637	769	612	574
29	Tumnar at Dantewara	Monsoon	1705	1906	1062	558	1758	685	1482	1551	783	1021
		Non-Monsoon	133	108	69	52	119	50	102	177	118	36
		Annual	1837	2014	1131	610	1877	735	1585	1728	901	1058
30	Yelli at Godaavari	Monsoon	12939	1784	1707	511	4949	1383	145	2610	82	0
		Non-Monsoon	36	1	0	0	36	0	0	5	0	0
		Annual	12974	1784	1707	511	4985	1383	145	2615	82	0
31	Zari at Dudha	Monsoon	762	123	139	161	618	192	39	321	43	1
		Non-Monsoon	3	0	0	0	1	0	0	0	0	0
		Annual	765	123	139	161	618	192	39	321	43	1

Source : SE, Godavari Circle, Central Water Commission, Hyderabad, Wainganga Division, Nagpur.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

V Basin : Krishna **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Arjunwad (Seasonal) at Krishna	Monsoon	17640	9962	5794	4811	5407	7328	4099	7809	5974	1438
		Non-Monsoon	0	0	0	0	2	0	0	0	0	0
		Annual	17640	9962	5794	4811	5410	7328	4099	7809	5974	1438
2	Bawapuram at Tungabhadra	Monsoon	4169	10595	5111	9253	4396	3425	1073	7847	7048	1032
		Non-Monsoon	389	931	391	1161	1316	196	277	38	165	126
		Annual	4558	11526	5501	10414	5713	3622	1351	7885	7213	1159
3	Cholachguda (Seasonal) at Malaprabha	Monsoon	695	1533	240	1272	328	341	42	255	255	263
		Non-Monsoon	90	63	111	75	205	51	21	32	50	3
		Annual	784	1596	352	1347	533	392	64	287	305	266
4	Dameracherla at Musi	Monsoon	595	1019	1303	1122	815	508	73	1633	344	133
		Non-Monsoon	893	835	796	584	829	235	64	536	360	16
		Annual	1488	1854	2098	1706	1644	743	137	2168	704	149
5	Doddipadu at Hundri	Monsoon										68
		Non-Monsoon	Discharge observations started from 18-11-2014								7	40
		Annual									7	108
6	Gokak Falls (Seasonal) at Ghataprabha	Monsoon	3050	2197	1405	1180	1308	2319	820	1722	864	703
		Non-Monsoon	37	43	23	52	81	57	31	23	30	22
		Annual	3087	2239	1428	1233	1389	2376	851	1746	894	726
7	Halia at Halia	Monsoon	79	437	222	107	201	100	12	409	88	59
		Non-Monsoon	92	102	243	130	222	70	14	92	75	8
		Annual	171	539	465	237	423	170	27	501	163	67
8	Huvinhedigi at Krishna	Monsoon	25627	20673	10509	11085	9280	13437	4526	11507	10293	882
		Non-Monsoon	1167	1021	1055	1421	1246	696	625	664	587	276
		Annual	26794	21694	11564	12505	10526	14134	5151	12171	10880	1158
9	Karad at Krishna	Monsoon	10216	6203	3289	2859	2634	3703	1501	3708	2309	962
		Non-Monsoon	608	521	598	530	123	39	0	7	0	44
		Annual	10824	6723	3887	3389	2757	3742	1501	3716	2309	1006
10	Keesara at Munneru	Monsoon	1969	1311	3903	85	3532	883	1922	1921	422	906
		Non-Monsoon	302	422	308	357	685	182	508	372	180	3
		Annual	2272	1733	4212	442	4218	1065	2429	2293	602	909
11	Kurundwad at Krishna	Monsoon	24683	16759	11813	7979	9817	11582	8574	12350	10147	3440
		Non-Monsoon	0	0	0	367	9	0	0	0	0	0
		Annual	24683	16759	11813	8346	9826	11582	8574	12350	10147	3440
12	Madhira at Wyra	Monsoon	390	368	663	24	732	276	354	313	126	184
		Non-Monsoon	127	161	98	168	240	92	136	101	119	7
		Annual	517	529	761	192	973	369	491	414	246	191
13	Malkhed at Kagna	Monsoon	62	705	803	1164	2038	629	541	899	724	88
		Non-Monsoon	34	216	116	143	259	55	66	182	82	64
		Annual	95	921	919	1307	2297	684	607	1081	806	151

Source : SE, Godavari & Krishna Circle, Central Water Commission, Hyderabad.

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Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

V Basin : Krishna **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
14	Mantralayam at Tungabhadra	Monsoon	4572	11231	5454	10967	5537	4006	1325	7610	6736	1273
		Non-Monsoon	869	1581	731	1317	2137	542	628	467	745	450
		Annual	5441	12812	6185	12284	7674	4548	1953	8077	7481	1723
15	Narasingpur at Bhima	Monsoon	11337	4560	2449	1037	1685	2055	65	1964	993	10
		Non-Monsoon	228	213	365	499	172	0	0	0	0	53
		Annual	11565	4773	2814	1537	1857	2055	65	1964	993	63
16	Paleru Bridge at Paleru	Monsoon	213								103	34
		Non-Monsoon	202	Discharge observation suspended on 31-5-2007							22	96	1
		Annual	414	and restarted GQ to GDSQ wef 1-3-2014.							22	199	35
17	Phulgaon (Seasonal) at Bhima	Monsoon	2720	964	1106	620	359	890	470	2672	1170	255
		Non-Monsoon	0	0	0	0	0	0	0	0	0	0
		Annual	2720	964	1106	620	359	890	470	2672	1170	255
18	Sadalga (Seasonal) at Dudhganga	Monsoon	4924	2673	2216	1736	2117	2864	1727	2504	1926	783
		Non-Monsoon	0	0	0	0	51	0	0	0	30	0
		Annual	4924	2673	2216	1736	2167	2864	1727	2504	1956	783
19	Samdoli (Seasonal) at Varna	Monsoon	5650	3839	2343	1949	2114	3190	2105	3129	2713	948
		Non-Monsoon	0	0	0	0	0	0	0	0	0	0
		Annual	5650	3839	2343	1949	2114	3190	2105	3129	2713	948
20	Sarati at Nira	Monsoon	3015	1865	748	1096	969	678	36	1170	250	0
		Non-Monsoon	53	0	0	298	77	0	0	0	0	0
		Annual	3068	1865	748	1394	1046	678	36	1170	250	0
21	T Ramapuram (Seasonal) at Hagari	Monsoon	207	814	906	1559	592	210	271	378	346	635
		Non-Monsoon	255	100	111	207	180	79	113	78	175	146
		Annual	461	914	1017	1766	772	289	384	456	521	781
22	Takli at Bhima	Monsoon	11671	5348	2094	3490	1470	2056	0	2022	1733	0
		Non-Monsoon	0	0	0	0	0	0	0	0	0	0
		Annual	11671	5348	2094	3490	1470	2056	0	2022	1733	0
23	Talikot (Seasonal) at Don	Monsoon	172	262	171	701	153	40	52	113	163	167
		Non-Monsoon	1	2	1	2	10	0	1	2	7	0
		Annual	173	264	172	704	163	41	53	115	170	167
24	Terwad (Seasonal) at Panchganga	Monsoon	8027	5496	4067	3163	3435	4797	3931	5079	4250	1748
		Non-Monsoon	11	0	0	0	0	0	0	0	14	0
		Annual	8038	5496	4067	3163	3435	4797	3931	5079	4264	1748
25	Vijayawada at Krishna	Monsoon	26350	25560	8820	12666	10849	7279	1229	10849	2373	237
		Non-Monsoon	391	702	937	1845	2976	27	486	413	0	0
		Annual	26741	26262	9757	14510	13825	7306	1715	11262	2373	237
26	Wadakbal at Sina	Monsoon	868	544	686	284	1872	112	17	222	82	3
		Non-Monsoon	4	24	95	250	264	2	1	3	26	0
		Annual	872	568	781	534	2136	115	18	225	108	3

Source : SE, Godavari & Krishna Circle, Central Water Commission, Hyderabad.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

V Basin : Krishna **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
27	Wadenapally at Krishna	Monsoon	32201	34258	11360	20318	12426	11330	984	12522	5663	511
		Non-Monsoon	3678	3971	4397	4529	4693	2257	1806	3315	2055	508
		Annual	35880	38229	15758	24846	17118	13586	2790	15837	7718	1019
28	Warunji at Koyna	Monsoon	6038	3909	2310	1800	1835	2963	890	2625	1651	330
		Non-Monsoon	394	370	363	237	160	79	0	14	0	19
		Annual	6432	4279	2673	2037	1995	3042	890	2639	1651	349
29	Yadgir at Bhima	Monsoon	14062	7084	4616	6669	7156	3662	822	3954	2195	395
		Non-Monsoon	128	542	120	883	896	294	221	374	0	6
		Annual	14191	7626	4736	7553	8053	3956	1043	4328	2195	401
30	Byladahalli at Haridra	Monsoon	127	126	220	283	395	244	124	327	274	198
		Non-Monsoon	103	39	63	47	258	76	89	26	84	51
		Annual	230	166	283	330	652	321	213	353	358	249
31	Haralahalli at Tungabhadra	Monsoon	6496	9341	6112	6921	5559	5851	3651	7998	6779	2771
		Non-Monsoon	683	891	556	902	1535	633	502	472	490	293
		Annual	7179	10232	6668	7824	7094	6484	4153	8470	7269	3063
32	Holehonnur at Bhadra	Monsoon	979	2271	1423	1737	1163	1424	676	2074	1630	795
		Non-Monsoon	492	636	840	780	1192	818	783	820	571	665
		Annual	1471	2907	2262	2517	2355	2242	1460	2895	2201	1460
33	Honnali at Tungabhadra	Monsoon	7536	9995	6949	6881	5327	6486	4334	8791	7064	4049
		Non-Monsoon	835	1092	655	893	1401	734	617	803	880	887
		Annual	8371	11087	7604	7775	6727	7219	4951	9594	7944	4936
34	Hoovinahole at Swarnamukhi	Monsoon	1	3	44	38	14	0	0	4	0	0
		Non-Monsoon	1	1	14	5	55	0	0	0	0	5
		Annual	2	4	58	43	69	0	0	4	0	5
35	Kellodu at Vedavathi	Monsoon	1	1	15	64	94	6	1	2	62	38
		Non-Monsoon	1	0	7	7	210	1	0	0	7	31
		Annual	1	1	21	71	305	7	1	2	69	69
36	Kuppelur at Kumudavathi	Monsoon	280	751	389	565	805	317	70	607	582	96
		Non-Monsoon	21	30	17	23	152	72	18	8	27	0
		Annual	301	782	406	588	957	389	88	615	609	96
37	Marol at Varada	Monsoon	2526	3220	1901	2325	1801	2434	1274	2526	2634	528
		Non-Monsoon	15	200	0	0	265	134	70	96	93	0
		Annual	2541	3420	1901	2325	2065	2568	1344	2622	2727	528
38	Shimoga at Tunga	Monsoon	6105	6770	5625	5838	4678	5747	4320	7403	6369	3389
		Non-Monsoon	261	533	265	248	385	273	252	309	304	281
		Annual	6366	7303	5890	6086	5062	6020	4572	7712	6673	3670

Source : SE, Godavari & Krishna Circle, Central Water Commission, Hyderabad.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

VI Basin : Cauvery **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Akkihebbal at	Monsoon	1750	-	-	1143	783	896	344	1202	813	478
		Non-Monsoon	231	-	-	310	435	248	68	122	140	57
		Annual	1981	-	-	1453	1218	1144	412	1324	953	535
2	Bendrahalli at Suvarnathi	Monsoon	16	-	-	21	49	34	6	24	54	28
		Non-Monsoon	5	-	-	6	20	5	1	3	3	4
		Annual	21	-	-	27	70	39	7	26	57	32
3	Biligundulu at cauvery	Monsoon	6320	-	-	5171	4292	5647	2088	6610	5291	3807
		Non-Monsoon	1002	-	-	1134	1575	1162	756	738	906	554
		Annual	7322	-	-	6305	5867	6809	2844	7348	6197	4361
4	Chunchunkatte at Cauvery	Monsoon	-	-	-	1842	1584	2073	1269	2581	2190	1338
		Non-Monsoon	-	-	-	123	151	89	10	71	148	24
		Annual	-	-	-	1965	1734	2163	1279	2652	2338	1363
5	Hogenakkal at Chinnar	Monsoon	4	-	-	1	17	5	1	6	24	21
		Non-Monsoon	1	-	-	1	27	2	0	0	1	13
		Annual	4	-	-	2	44	7	1	6	25	34
6	K.M.Vadi at Lakhshmanthirtha	Monsoon	366	-	-	433	186	353	126	534	288	238
		Non-Monsoon	3	-	-	10	11	2	0	4	8	2
		Annual	368	-	-	442	197	354	126	538	295	240
7	Kollegal at Cauvery	Monsoon	-	-	-	4619	3611	5080	1661	6531	5120	2916
		Non-Monsoon	-	-	-	609	946	608	371	407	512	267
		Annual	-	-	-	5228	4557	5688	2032	6938	5632	3182
8	Kudige at Cauvery	Monsoon	6903	-	-	2524	1773	2421	1672	4144	3227	2208
		Non-Monsoon	1212	-	-	167	211	163	111	162	201	170
		Annual	8115	-	-	2691	1984	2584	1782	4306	3428	2377
9	Gandhavayal	Monsoon	-	-	-	-	-	-	-	-	-	42
		Non-Monsoon	-	-	-	-	-	-	-	-	-	16
		Annual	-	-	-	-	-	-	-	-	-	58
10	M.H.Halli at Hemavathi	Monsoon	2900	-	-	882	473	748	419	784	606	385
		Non-Monsoon	116	-	-	254	321	177	202	40	153	68
		Annual	3017	-	-	1136	794	925	621	824	760	453
11	Sakleshpur at Hemavathi	Monsoon	619	-	-	1193	1088	1118	842	1393	1246	726
		Non-Monsoon	67	-	-	97	119	81	44	77	83	52
		Annual	685	-	-	1290	1207	1199	886	1470	1329	778
12	T. Bekuppe at Arkavathi	Monsoon	1649	-	-	225	143	169	83	145	115	183
		Non-Monsoon	59	-	-	86	84	81	55	78	107	100
		Annual	1708	-	-	311	227	250	138	223	222	283

Source :Cauvery Basin, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

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Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

VI Basin : Cauvery **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
13	T.K.Halli at Shimsa	Monsoon	363	-	-	881	753	497	156	286	269	389
		Non-Monsoon	102	-	-	223	277	147	58	54	81	24
		Annual	465	-	-	1104	1030	644	214	340	350	414
14	T.Narasipur at Kabini	Monsoon	2940	-	-	2381	1282	2190	909	2113	2078	1339
		Non-Monsoon	304	-	-	328	392	322	200	55	181	178
		Annual	3245	-	-	2708	1675	2512	1109	2168	2260	1517
15	Thimmanahalli at Yagachi	Monsoon	171	-	-	315	325	177	59	136	120	91
		Non-Monsoon	21	-	-	60	69	29	9	23	28	15
		Annual	193	-	-	374	394	206	68	159	148	106
16	Urachikottai at Cauvery	Monsoon	-	-	-	4351	3272	6022	2523	5143	3939	3477
		Non-Monsoon	-	-	-	1434	1568	1860	639	1258	1675	1275
		Annual	-	-	-	5785	4840	7882	3163	6402	5614	4752
17	Nellithurai at Bhavani	Monsoon	-	-	-	2065	1613	1716	833	1902	1249	946
		Non-Monsoon	-	-	-	314	471	602	174	233	348	265
		Annual	-	-	-	2380	2085	2318	1007	2136	1597	1211
18	Thengumarahada at Moyar	Monsoon	-	-	-	377	221	191	72	233	180	153
		Non-Monsoon	-	-	-	145	113	120	78	109	130	120
		Annual	-	-	-	521	334	311	150	342	311	273
19	Savandapur at Bhavani	Monsoon	-	-	-	332	391	314	176	234	338	268
		Non-Monsoon	-	-	-	256	252	250	76	123	210	205
		Annual	-	-	-	588	643	564	252	357	548	472
20	Nallamaranpatty at Amaravathi	Monsoon	-	-	-	105	104	122	6	39	134	23
		Non-Monsoon	-	-	-	58	184	67	0	0	16	335
		Annual	-	-	-	163	288	189	6	39	150	358
21	Kodumudi at Cauvery	Monsoon	-	-	-	5065	4061	7154	2826	5212	4256	3663
		Non-Monsoon	-	-	-	2196	2549	2667	871	1431	1919	1564
		Annual	-	-	-	7261	6609	9820	3697	6644	6176	5227
22	Musiri at Cauvery	Monsoon	-	-	-	5569	3884	6465	2315	4947	3522	3105
		Non-Monsoon	-	-	-	1378	1871	1862	596	936	1355	1457
		Annual	-	-	-	6947	5755	8327	2911	5883	4877	4562
23	Elunuthimangalam at Noyyal	Monsoon	-	-	-	83	104	106	5	18	98	274
		Non-Monsoon	-	-	-	50	95	72	3	14	117	196
		Annual	-	-	-	133	200	178	8	32	214	470
24	Sevanur at Chittar	Monsoon	-	-	-	9	3	4	0	4	5	5
		Non-Monsoon	-	-	-	2	3	2	0	2	2	2
		Annual	-	-	-	11	6	7	0	6	7	7

Source :Cauvery Basin, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

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Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

VI Basin : Cauvery **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
25	Thevur at Sarabenga	Monsoon	-	-	-	4	24	11	0	6	6	6
		Non-Monsoon	-	-	-	3	5	5	0	3	4	4
		Annual	-	-	-	7	29	16	0	9	10	10
26	Thoppur at Thoppaiyar	Monsoon	-	-	-	0	1	2	0	0	0	0
		Non-Monsoon	-	-	-	0	6	0	0	0	0	4
		Annual	-	-	-	0	7	2	0	0	0	4
27	Kudlur at Palar	Monsoon	-	-	-	14	99	12	6	3	31	8
		Non-Monsoon	-	-	-	3	45	6	0	0	4	3
		Annual	-	-	-	16	144	18	6	3	35	12
28	Annavasal at Nattar	Monsoon	-	-	-	11	8	22	4	8	9	7
		Non-Monsoon	-	-	-	8	12	10	0	1	7	9
		Annual	-	-	-	18	20	31	4	10	16	16
29	Peralam at Vanjiyar	Monsoon	-	-	-	7	6	12	3	8	7	5
		Non-Monsoon	-	-	-	4	6	3	0	1	2	4
		Annual	-	-	-	11	12	14	4	9	9	9
30	Menangudi at Noolar	Monsoon	-	-	-	32	35	75	20	31	40	19
		Non-Monsoon	-	-	-	23	18	15	0	9	13	16
		Annual	-	-	-	55	53	91	20	41	53	34
31	Porakudi at Arasalar	Monsoon	-	-	-	55	45	71	31	17	33	34
		Non-Monsoon	-	-	-	47	54	38	0	1	11	43
		Annual	-	-	-	101	99	109	31	18	44	77
32	Thengudi at Thirumalairajanar	Monsoon	-	-	-	93	85	95	34	36	48	58
		Non-Monsoon	-	-	-	77	71	41	4	22	27	58
		Annual	-	-	-	169	156	136	38	58	75	117
33	Gopurajapuram at Puravidaiyanar	Monsoon	-	-	-	31	33	42	21	9	33	27
		Non-Monsoon	-	-	-	31	39	17	0	6	4	25
		Annual	-	-	-	62	72	59	21	15	37	52
34	Nallathur at Nandalar	Monsoon	-	-	-	44	37	78	29	17	71	47
		Non-Monsoon	-	-	-	41	47	16	0	8	12	50
		Annual	-	-	-	85	84	94	29	25	84	97
35	Muthankera at Kabini	Monsoon	-	-	-	2166	1650	2414	1288	2998	2851	1646
		Non-Monsoon	-	-	-	189	189	97	66	142	183	124
		Annual	-	-	-	2354	1838	2512	1354	3141	3034	1769

Source : Cauvery Basin, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

VII Basin : Pennar **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Nellore at Pennar	Monsoon	-	349	42	122	863	226	36	22	1	1015
		Non-monsoon	-	54	16	32	658	91	34	6	8	668
		Annual	-	402	58	155	1521	317	70	29	9	1683
2	Nandipalli at Sagileru	Monsoon	-	289	138	68	144	51	13	98	1	17
		Non-monsoon	-	21	124	38	115	39	10	6	0	0
		Annual	-	310	262	106	259	90	23	105	1	18
3	Chennur at Pennar	Monsoon	-	4229	1914	2757	3254	2034	554	2833	2597	466
		Non-monsoon	-	576	297	471	1146	414	98	569	136	29
		Annual	-	4804	2211	3228	4400	2448	652	3401	2734	496
4	Kamalapuram at Papagni	Monsoon	-	20	17	2	11	29	0	128	0	55
		Non-monsoon	-	1	7	0	0	0	0	0	0	12
		Annual	-	20	24	2	11	29	0	128	0	67
5	Alladupalli at Kunderu	Monsoon	-	2527	683	1700	2310	1622	496	2387	2724	262
		Non-monsoon	-	367	211	392	821	379	143	797	155	17
		Annual	-	2895	893	2092	3131	2001	639	3184	2879	279
6	Tadapatri at Pennar	Monsoon	-	217	112	35	1	1	2	2	0	0
		Non-monsoon	-	17	13	4	0	0	0	0	0	0
		Annual	-	234	124	39	1	1	2	2	0	0
7	Nagalamadike at Pennar	Monsoon	-	0	8	0	0	0	0	6	0	0
		Non-monsoon	-	0	0	0	0	0	0	0	0	0
		Annual	-	0	8	0	0	0	0	6	0	0
8	Singavaram at Chitravathi	Monsoon	-	0	0	0	0	0	0	0	0	0
		Non-monsoon	-	0	0	0	21	0	0	0	0	0
		Annual	-	0	0	0	21	0	0	0	0	0

Source : East Flowing Rivers from Mahanadi to Kanyakumari, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

VIII Basin : East Flowing Rivers from Mahanadi to Pennar **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Purushottam-pur	Monsoon	2876	2549	2033	2116	2457	986	1437	4923	2643	1595
		Non-Monsoon	36	76	34	82	354	36	62	177	88	93
		Annual	2912	2624	2067	2198	2811	1022	1500	5100	2731	1688
2	Gunupur	Monsoon	4967	2819	2561	2473	2080	1537	1934	2635	2889	970
		Non-Monsoon	219	257	155	147	299	119	134	333	248	77
		Annual	5186	3076	2716	2620	2379	1656	2068	2968	3137	1047
3	Kashinagar	Monsoon	6047	3520	2875	2631	2767	1797	2116	3446	4911	1265
		Non-Monsoon	374	449	195	176	372	157	152	404	368	173
		Annual	6422	3969	3070	2807	3139	1954	2268	3849	5279	1438
4	Srikakulam	Monsoon	4388	3331	2573	1920	4841	1511	2365	3169	3731	1111
		Non-Monsoon	277	429	209	237	1067	213	230	366	339	121
		Annual	4665	3760	2782	2157	5908	1724	2595	3535	4070	1232
5	Anakapalli	Monsoon	592	1028	301	83	1268	833	1268	657	371	504
		Non-Monsoon	59	123	43	0	436	39	183	86	36	58
		Annual	651	1151	344	83	1704	872	1451	743	407	563

Source : East Flowing Rivers from Mahanadi to Kanyakumari, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

IX Basin : East Flowing Rivers from Pennar to Kanyakumari **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Naidupeta at Swarnamukhi	Monsoon	-	174	142	18	199	61	47	30	3	628
		Non-monsoon	-	236	99	42	142	56	154	19	21	226
		Annual	-	411	241	60	341	117	202	50	24	854
2	Sulurpet at Kalingi	Monsoon	-	189	244	62	70	89	32	12	14	375
		Non-monsoon	-	119	39	15	23	52	103	0	4	175
		Annual	-	308	283	76	93	141	135	12	18	550
3	Chengalpet at Palar	Monsoon	-	36	99	25	38	46	7	5	2	729
		Non-monsoon	-	127	66	25	138	49	7	1	0	1216
		Annual	-	163	165	50	176	96	14	7	2	1945
4	Magaral at Cheyyar	Monsoon	-	0	29	0	0	7	1	0	0	148
		Non-monsoon	-	36	20	0	54	9	1	0	0	350
		Annual	-	36	49	0	54	17	2	0	0	497
5	Arcot at Palar	Monsoon	-	0	0	0	1	0	0	0	0	76
		Non-monsoon	-	4	0	0	5	0	0	0	0	92
		Annual	-	4	0	0	6	0	0	0	0	168
6	Kumarapalayam at Varahanadi	Monsoon	-	0	55	7	100	41	14	0	0	83
		Non-monsoon	-	7	26	6	238	101	0	0	0	295
		Annual	-	7	81	13	338	142	14	0	0	377
7	Villupuram at Ponnaiyar	Monsoon	-	0	86	3	139	39	21	0	0	101
		Non-monsoon	-	208	125	3	255	79	0	0	0	465
		Annual	-	208	211	6	394	119	21	0	0	566
8	Vazhavachanur at Ponnaiyar	Monsoon	-	0	23	24	147	40	25	6	2	58
		Non-monsoon	-	83	147	114	244	167	30	4	23	215
		Annual	-	83	170	138	391	208	55	10	25	273
9	Gummanur at Ponnaiyar	Monsoon	-	141	239	160	142	163	62	220	225	346
		Non-monsoon	-	71	72	56	63	54	37	46	113	144
		Annual	-	212	311	216	205	218	99	266	338	490
10	Kudalaiyathur at Vellar	Monsoon	-	33	316	78	377	232	22	2	3	146
		Non-monsoon	-	173	168	128	665	213	0	0	0	373
		Annual	-	206	484	206	1042	445	22	3	3	519
11	Avarankuppam at Palar	Monsoon	-	2	14	13	7	9	1	0	0	5
		Non-Monsoon	-	2	4	1	4	1	0	0	0	2
		Annual	-	4	18	14	11	9	1	0	0	7
12	Theni at Suruliyar	Monsoon	-	632	429	268	359	510	137	436	396	333
		Non-Monsoon	-	306	80	125	216	220	20	59	257	353
		Annual	-	939	509	392	576	731	158	495	652	686
13	Murappanadu at Tambraparani	Monsoon	-	211	316	221	156	204	52	233	254	297
		Non-Monsoon	-	537	375	242	190	155	121	166	371	718
		Annual	-	748	691	463	346	359	173	399	625	1015
14	A.P.Puram at Chittar	Monsoon	-	1	1	27	0	2	0	0	1	28
		Non-Monsoon	-	63	2	2	0	1	0	2	3	16
		Annual	-	64	3	29	0	3	0	2	4	44
15	Paramakudi at Vaigai	Monsoon	-	42	49	3	20	11	0	0	11	0
		Non-Monsoon	-	138	12	13	46	15	0	0	5	71
		Annual Flow	-	180	61	16	66	26	0	0	15	71
16	Irrukkankudi at Vaippar	Monsoon	-	1	14	0	4	1	0	0	0	0
		Non-Monsoon	-	16	4	0	12	5	0	0	0	36
		Annual	-	18	18	0	17	6	0	0	0	36
17	Ambasamudram at Vaigai	Monsoon	-	45	43	31	29	71	6	1	26	33
		Non-Monsoon	-	150	18	17	35	29	0	2	14	54
		Annual	-	195	61	48	64	100	6	3	40	87

Source : East Flowing Rivers from Mahanadi to Kanyakumari, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

X Basin : Narmada **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Orsang at Chandawada	Monsoon	2733	2143	807	323	793	1087	1411	584	694	314.22
		Non-Monsoon	4	33	132	0	15	17	28	16	13	0.00
		Annual	2737	2176	939	323	808	1104	1439	601	708	314.22
2	Narmda at Garudeswar	Monsoon	26499	20342	3126	5409	6594	6594	20423	44917	7246	5548.96
		Non-Monsoon	5364	3660	1312	1342	1701	1701	2080	4212	1691	563.70
		Annual	31864	24002	4438	6745	8295	8295	22503	49129	8937	6112.66
4	Goi at Pati	Monsoon	-	-	-	238	624	415	257	584	327	190.36
		Non-Monsoon	-	-	-	46	60	0	0	16	13	43.83
		Annual	-	-	-	284	684	415	258	601	339	234.19
5	Uri at Dhulsar	Monsoon	-	-	-	38	129	602	160	316	179	85.23
		Non-Monsoon	-	-	-	1	1	1	0	3	0	0
		Annual	-	-	-	39	130	603	160	319	179	85.23
6	Narmada at Rajghat	Monsoon	17150	-	-	-	-	-	-	-	0	site closed w.e.f. 01.07.2007
		Non-Monsoon	6900	-	-	-	-	-	-	-	0	
		Annual	24051	-	-	-	-	-	-	-	0	
7	Narmada AT Mandleswar	Monsoon	23976	15089	7178	12839	14423	33194	32516	51905	11947	12129.52
		Non-Monsoon	9749	9665	9322	15227	14038	-	12985	13137	12853	8596.71
		Annual	33724	24754	16500	28066	28461	44849	45501	65042	24799	20726.23
8	Kundi at Kogaon	Monsoon	1871	987	163	539	1463	1039	608	1407	1434	656.72
		Non-Monsoon	10	6	0	87	78	0	5	24	34	5.26
		Annual	1881	994	163	626	1531	1040	613	1431	1468	661.98
9	Chhota Tawa at Ginnore	Monsoon	0	-	-	-	-	-	-	-	-	site closed w.e.f. 01.04.1999
		Non-Monsoon	0	-	-	-	-	-	-	-	-	
		Annual	0	-	-	-	-	-	-	-	-	
10	Narmada at Motakka	Monsoon	21782	-	-	-	-	-	-	-	-	Discharge started on 23.08.99 and closed on
		Non-Monsoon	10973	-	-	-	-	-	-	-	-	
		Annual	32755	-	-	-	-	-	-	-	-	
11	Narmada at Handia	Monsoon	21324	11948	9489	15616	12765	23945	23291	39445	10053	9548.15
		Non-Monsoon	3847	4241	5090	3376	41153	4428	3197	4554	4491	3612.81
		Annual	25170	16188	14579	18992	16918	28373	26488	43999	14544	13160.96
12	Ganjal at Chhidgaon	Monsoon	1454	1468	309	796	717	921	2129	2448	725	436.8
		Non-Monsoon	34	32	8	66	49	26	43	50	85	108
		Annual	1488	1500	317	862	766	947	2172	2498	810	544.8
13	Narmada at Hoshangabad	Monsoon	15939	8661	8186	11246	9387	21516	18095	34505	8726	6260.8
		Non-Monsoon	4209	3673	3900	2584	3483	3754	2983	4039	3572	2754.34
		Annual	20148	12334	12086	13830	12870	25270	21078	38544	12298	9015.14
14	Narmada at Sandia	Monsoon	10028	5779	6503	-	6538	19006	10877	24760	7130	4286.27
		Non-Monsoon	3837	3353	3207	1909	2575	3348	2713	3891	3731	1927.67
		Annual	13865	9132	9711	11272	9113	22354	13590	28651	10861	6213.94
15	Shakkar at Gadarwara	Monsoon	2216	1573	746	2058	1275	1257	2116	2833	1002	1040.82
		Non-Monsoon	62	19	36	94	43	25	25	107	44	12.12
		Annual	2278	1592	782	2192	1318	1282	2140	2941	1046	1052.94
16	Narmada at Barmanghat	Monsoon	6092	3341	5608	4005	5725	14990	7809	19072	5839	2386.57
		Non-Monsoon	3000	2730	2795	1113	2064	2846	2494	3256	2923	1835.58
		Annual	9092	6071	8403	5718	7789	17836	10302	22327	8762	4222.15

Source SE(C),Govt. of India, CWC, Office of the Chief Eng., Narmada Basin Oraganistion, Bhopal (MP).

Contd/-

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

X Basin : Narmada **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
17	Sher at Belkheri	Monsoon	1135	428	296	470	595	659	634	1236	511	310.1
		Non-Monsoon	15	8	6	23	11	6	14	49	16	9.37
		Annual	1151	436	302	493	605	666	648	1285	527	319.47
18	Hiran at Patan	Monsoon	484	531	1497	426	1656	2785	1260	3421	818	515.85
		Non-Monsoon	141	43	69	111	89	132	159	153	114	96.77
		Annual	625	574	1565	838	1746	2898	1419	3574	932	612.62
19	Banjar at Bamni	Monsoon	670	546	484	247	460	707	476	1260	743	481.4
		Non-Monsoon	28	22	8	23	17	38	56	116	112	35.91
		Annual	698	568	492	270	477	745	532	1376	856	517.31
20	Burhner at Mohgaon	Monsoon	2171	1433	1236	571	1952	3242	2020	2944	1957	1310.85
		Non-Monsoon	75	69	56	67	62	142	106	216	169	87.4
		Annual	2246	1502	1293	638	2014	3385	2126	3161	2126	1398.25
21	Narmada at Manot	Monsoon	2668	1298	2092	1109	1918	3711	2012	2580	2422	1285.98
		Non-Monsoon	159	97	83	114	106	166	165	294	288	123.2
		Annual	2827	1395	2174	1223	2023	3877	2177	2874	2710	1409.18
22	Narmada at Dindori	Monsoon	1138	560	766	500	717	1592	1013	1527	1286	573
		Non-Monsoon	98	72	112	87	49	120	71	145	131	13.01
		Annual	1236	632	878	588	766	1711	1083	1673	1417	586.01

Source SE(C),Govt. of India, CWC, Office of the Chief Eng., Narmada Basin Oraganistion, Bhopal (MP).

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

XI Basin : Tapi **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Gidhade	Monsoon	14867	9055	3551	3573	5909	4562	8061	10886	367	2650.19
		Non-Monsoon	105	233	0	0	0	0	0	0	0	0.00
		Annual	14972	9288	3551	3573	5909	4562	8061	10886	367	2650.19
2	Dedtalai	Monsoon	NA	NA	NA	NA	NA	NA	NA	NA	3227.93	2639.33
		Non-Monsoon	NA	NA	NA	NA	NA	NA	NA	NA	83.46	4.28
		Annual	NA	NA	NA	NA	NA	NA	NA	NA	3311.38	2643.61
3	Purna at Gopalkheda	Monsoon	1956	2729	210	270	1369	600	1351	2313	88	928.37
		Non-Monsoon	30	98	1	24	31	0	8	61	2	0.00
		Annual	1986	2827	211	295	1400	601	1359	2374	90	928.37
4	Purna at Yerli	Monsoon	3480	3298	364	578	2374	854	1823	3755	131	1720.36
		Non-Monsoon	38	42	1	62	53	1	8	66	3	0.00
		Annual	3518	3340	365	640	2426	855	1832	3822	134	1720.36
5	Sarangkheda	Monsoon	17388	11355	3443	3071	7001	6202	8298	12353	293	3256.60
		Non-Monsoon	99	59	0	0	0	0	0	0	0	0.00
		Annual	17486	11414	3443	3071	7001	6202	8298	12353	293	3256.60
6	Tapi at Burhanpur	Monsoon	4838	9708	2259	1806	3874	5003	7949	8728	387	4099.36
		Non-Monsoon	67	89	48	222	109	36	84	198	4	0.00
		Annual	4905	9797	2307	2028	3983	5039	8033	8925	391	4099.36
7	Pingalwada	Monsoon	1211.17	564.14	453.24	85.75	618.11	327.88	204.89	531.23	679.77	97.04
		Non-Monsoon	27.92	81.69	72.84	30.09	80.53	13.17	88.03	96.96	115.22	105.60
		Annual	1239.09	645.82	526.08	115.84	698.64	341.04	292.93	628.20	794.99	202.63
8	Motinaroli	Monsoon	747.33	516.72	397.28	164.81	260.16	351.69	65.89	1229.24	526.25	285.69
		Non-Monsoon	60.05	53.06	53.12	27.07	47.07	29.75	21.02	90.59	109.99	133.67
		Annual	807.38	569.79	450.40	191.88	307.23	381.44	86.91	1319.84	636.24	419.36

Source: SE, Tapi Division, CWC, Gandhi Nagar.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

XII Basin : West Flowing Rivers from Tapi to Tadri — **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Santeguli at Aghanashini	Monsoon	4551	-	-	3021	2609	3291	2436	3627	3219	1542
		Non-monsoon	79	-	-	92	89	73	65	78	87	55
		Annual	4630	-	-	3112	2698	3364	2501	3706	3306	1596
2	Gadat	Monsoon	2125.55	1732.84	1794.38	703.65	1199.20	1299.33	635.42	2151.76	1160.88	453.05
		Non-monsoon	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Annual	2125.55	1732.84	1794.38	703.65	1199.20	1299.33	635.42	2151.76	1160.88	453.05
3	Durvesh	Monsoon	4996.20	4009.25	4294.70	1949.91	3507.34	3634.47	2458.62	3709.84	2969.55	1088.59
		Non-monsoon	42.15	72.52	65.69	125.72	322.11	66.68	7.38	34.92	0.16	0.54
		Annual	5038.36	4081.77	4360.39	2075.63	3829.45	3701.15	2466.00	3744.77	2969.71	1089.13
4	Ozerkheda	Monsoon	1424.48	893.01	1043.49	583.16	767.46	1458.98	1289.39	1001.69	926.89	552.39
		Non-Monsoon	11.63	11.23	7.57	11.96	74.55	7.49	39.05	23.95	184.78	147.30
		Annual	1436.11	904.25	1051.06	595.12	842.01	1466.47	1328.45	1025.64	1111.67	699.69
5	Nanipalson	Monsoon	2024.15	935.07	1308.66	647.02	837.36	1073.56	748.19	1380.22	969.15	517.20
		Non-Monsoon	15.60	11.57	10.67	11.19	42.68	7.50	10.16	37.15	8.89	8.49
		Annual	2039.76	946.64	1319.33	658.21	880.04	1081.07	758.36	1417.37	978.04	525.69
6	Mahua	Monsoon	2499.51	1696.17	1955.59	554.46	883.33	840.29	494.95	1522.23	511.62	245.93
		Non-Monsoon	52.18	59.21	67.44	16.74	42.33	17.79	30.05	24.99	0.00	0.00
		Annual	2551.69	1755.38	2023.03	571.20	925.66	858.08	524.99	1547.22	511.62	245.93

Source : West Flowing Rivers from Kanyakumari to Tapi, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari — **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Addoor at Gurpur	Monsoon	2655	-	-	2527	2667	2710	1879	2520	2024	1615
		Non-monsoon	0	-	-	0	6	15	0	0	0	0
		Annual	2655	-	-	2527	2672	2725	1879	2520	2024	1615
2	Avershe at Sita	Monsoon	1269	-	-	1316	1329	1454	1090	1228	1151	851
		Non-monsoon	22	-	-	26	34	13	10	19	21	21
		Annual	1291	-	-	1341	1364	1468	1099	1248	1172	872
3	Bantwal at Netravathi	Monsoon	13562	-	-	11805	11660	11930	9245	13006	10716	6799
		Non-monsoon	82	-	-	102	306	221	42	165	152	271
		Annual	13644	-	-	11907	11966	12152	9287	13171	10868	7070
4	Haladi at Haladi	Monsoon	1865	-	-	1828	1535	1953	1599	1791	1643	1134
		Non-monsoon	490	-	-	535	423	549	548	517	491	436
		Annual	2354	-	-	2362	1958	2502	2148	2308	2134	1570
5	Yennehole at Yennehole	Monsoon	1454	-	-	1664	1393	1698	1173	1739	1496	1207
		Non-monsoon	23	-	-	39	44	21	18	15	22	28
		Annual	1477	-	-	1703	1437	1719	1191	1754	1518	1235
6	Arangaly at Chalakudy	Monsoon	-	-	-	1717	1499	2016	925	2589	1997	1356
		Non-monsoon	-	-	-	72	115	21	7	57	159	154
		Annual	-	-	-	1789	1614	2037	932	2646	2155	1509
7	Ashramam at Pazhayar	Monsoon	-	-	-	76	99	71	14	30	71	146
		Non-monsoon	-	-	-	3	69	27	0	22	36	1
		Annual	-	-	-	78	167	98	14	52	108	147
8	Ayilam at Vamanapuram	Monsoon	-	-	-	384	896	409	38	435	523	425
		Non-monsoon	-	-	-	96	119	98	0	44	57	82
		Annual	-	-	-	480	1014	506	38	479	579	507
9	Erinjipuzha at Payaswani	Monsoon	-	-	-	1931	2259	2695	1633	1633	2524	1704
		Non-monsoon	-	-	-	91	93	87	61	61	95	61
		Annual	-	-	-	2022	2353	2782	1694	1694	2619	1765

Source : West Flowing Rivers from Kanyakumari to Tapi, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Contd/-

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	-2	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
10	Kalampur at Kaliyar	Monsoon	-	-	-	861	1147	1044	713	1488	1404	858
		Non-monsoon	-	-	-	40	20	12	6	46	64	92
		Annual	-	-	-	902	1167	1056	719	1534	1468	951
11	Kallooppara at Manimala	Monsoon	-	-	-	1272	1953	1608	841	2115	2032	1296
		Non-monsoon	-	-	-	187	183	176	20	153	238	219
		Annual	-	-	-	1459	2136	1784	861	2268	2271	1516
12	Karathodu at Kadalundi	Monsoon	-	-	-	1356	1226	1418	619	1653	1838	808
		Non-monsoon	-	-	-	43	56	19	0	18	16	7
		Annual	-	-	-	1399	1282	1437	619	1671	1854	815
13	Kidangoor at Meenachil	Monsoon	-	-	-	1174	1788	1613	1021	2207	2023	1060
		Non-monsoon	-	-	-	129	214	102	25	141	232	132
		Annual	-	-	-	1303	2003	1715	1045	2348	2255	1192
14	Kumbidi at Bharathapuzha	Monsoon	-	-	-	4707	4642	5503	2198	5821	6009	2665
		Non-monsoon	-	-	-	201	453	239	47	187	331	183
		Annual	-	-	-	4908	5094	5741	2245	6008	6340	2848
15	Kuniyil at Chaliyar	Monsoon	-	-	-	4433	3755	5016	2819	5743	4616	2542
		Non-monsoon	-	-	-	44	115	89	0	70	0	0
		Annual	-	-	-	4477	3870	5105	2819	5814	4616	2542
16	Kuttyadi at Kuttyadi	Monsoon	-	-	-	1276	954	1281	827	1706	1426	878
		Non-monsoon	-	-	-	145	114	109	70	102	131	78
		Annual	-	-	-	1421	1068	1390	897	1807	1557	956
17	Kuzhithurai at Thambraparni	Monsoon	-	-	-	3	118	4	0	0	33	318
		Non-monsoon	-	-	-	0	164	0	0	0	119	107
		Annual	-	-	-	3	283	4	0	0	152	425
18	Malakkara at Pamba	Monsoon	-	-	-	2718	4128	3288	1715	4253	3630	2460
		Non-monsoon	-	-	-	569	450	304	7	297	408	461
		Annual	-	-	-	3287	4578	3593	1722	4550	4039	2921
19	Mankara at Bharathapuzha	Monsoon	-	-	-	685	522	899	233	780	884	348
		Non-monsoon	-	-	-	45	121	68	19	41	145	92
		Annual	-	-	-	730	643	967	252	821	1029	440

Source : West Flowing Rivers from Kanyakumari to Tapi, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

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Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari — **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
20	Neeleswaram	Monsoon	-	-	-	5889	5961	5976	3758	8520	6705	4465
		Non-monsoon	-	-	-	797	1548	1513	201	871	1327	578
		Annual	-	-	-	6686	7509	7489	3960	9391	8033	5043
21	Pattazhy at Kallada	Monsoon	-	-	-	495	1782	982	464	1272	1243	691
		Non-monsoon	-	-	-	617	691	442	100	467	449	377
		Annual	-	-	-	1112	2473	1425	564	1739	1692	1068
22	Perumannu at Valapatnam	Monsoon	-	-	-	3474	3092	3958	2829	5268	4542	2416
		Non-monsoon	-	-	-	129	155	116	66	106	113	50
		Annual	-	-	-	3603	3248	4074	2894	5374	4655	2466
23	Pudur at Kannadipuzha	Monsoon	-	-	-	368	246	311	102	305	390	157
		Non-monsoon	-	-	-	23	83	43	4	16	77	50
		Annual	-	-	-	391	328	354	106	321	467	206
24	Pulamanthole at Pulanthodu	Monsoon	-	-	-	1720	2022	2150	869	2030	1956	873
		Non-monsoon	-	-	-	85	151	88	37	46	95	65
		Annual	-	-	-	1805	2174	2237	906	2077	2051	938
25	Ramamangalam at Muvattupuzha	Monsoon	-	-	-	3385	4137	4199	2743	5316	4213	2914
		Non-monsoon	-	-	-	1232	1609	1427	436	1327	1228	1094
		Annual	-	-	-	4616	5745	5627	3178	6643	5441	4008
26	Thumpamon at Achankovil	Monsoon	-	-	-	660	1238	880	400	1225	1158	704
		Non-monsoon	-	-	-	94	162	95	5	165	110	104
		Annual	-	-	-	754	1400	975	406	1390	1269	809
27	Vandiperiyar at Periyar	Monsoon	-	-	-	123	127	144	62	190	135	106
		Non-monsoon	-	-	-	5	12	12	2	10	10	26
		Annual	-	-	-	128	138	156	64	200	145	131
28	Ambarampalayam at Chalakudy	Monsoon	-	-	-	296	238	243	109	182	209	121
		Non-monsoon	-	-	-	131	188	169	104	148	169	191
		Annual	-	-	-	428	426	413	213	330	378	312

Source : West Flowing Rivers from Kanyakumari to Tapi, SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

XIV Basin : Mahi **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Chakaliya at Anas	Monsoon	4864	1884	525	400	454	614	1228	1260	704	583
		Non-Monsoon	25	44	6	1	3	2	0	153	52	14
		Annual	4889	1927	531	401	458	616	1228	1413	756	597
2	Dhariawad at Jakham	Monsoon	1124	94	126	95	98	911	539	774	37	335
		Non-Monsoon	21	26	24	10	15	26	24	40	22	24
		Annual	1144	120	150	106	114	937	562	814	59	359
3	Khanpur at Mahi	Monsoon	21276	6290	505	367	926	4787	6813	8225	1825	2404
		Non-Monsoon	604	447	363	186	152	228	226	562	379	289
		Annual	21880	6737	868	553	1078	5014	7039	8787	2204	2692
4	Mataji at Mahi	Monsoon	4035	2136	274	1055	606	2999	2218	3337	661	1570
		Non-Monsoon	20	24	4	12	17	3	12	150	43	0
		Annual	4055	2160	278	1067	623	3001	2230	3488	704	1570
5	Paderdibadi at Mahi	Monsoon	10821	1514	297	454	364	3458	2811	2729	1206	1484
		Non-Monsoon	126	87	17	98	42	319	138	274	153	194
		Annual	10946	1600	314	552	407	3777	2949	3003	1360	1678
6	Sapawada at Rupen	Monsoon	223	200	70	5	80	29	0	77	4	153
		Non-Monsoon	0	0	0	14	0	0	0	1	0	0
		Annual	223	200	70	19	81	29	0	78	4	153
7	Rangeli at Som	Monsoon	3096	216	210	332	146	1138	889	1792	644	560
		Non-Monsoon	49	48	19	37	70	160	64	168	110	110
		Annual	3146	264	229	370	217	1299	952	1960	754	671
8	Una	Monsoon	-	-	-	-	-	-	-	-	29	48
		Non-Monsoon	-	-	-	-	-	-	-	-	0	0
		Annual	-	-	-	-	-	-	-	-	29	48

Source: Superintending Engineer, Mahi Division, CWC, Gandhi Nagar.

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Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

XV Basin : Sabarmati **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Derol Bridge at Sabarmati	Monsoon	2861	692	26	14	32	326	50	61	38	547
		Non-Monsoon	4	0	0	0	0	0	0	0	0	1
		Annual	2864	693	26	14	32	326	50	61	38	549
2	Kheroj at Sabarmati	Monsoon	1115	498	128	121	424	599	234	143	166	1138
		Non-Monsoon	7	6	0	0	38	37	3	8	0	0
		Annual	1122	504	128	121	462	636	237	151	166	1138
3	Voutha at Sabarmati	Monsoon	5909	4651	816	569	933	2346	1620	2897	1363	1781
		Non-Monsoon	630	948	475	345	334	732	274	754	468	365
		Annual	6539	5599	1291	914	1267	3078	1894	3651	1831	2146
4	Kotra (Jotasan) at Wakal	Monsoon	1062	329	104	62	178	211	108	136	187	251
		Non-Monsoon	19	6	0	0	7	10	13	33	3	0
		Annual	1081	334	104	62	185	220	121	169	190	251
5	Gadvel (Ratanpur) at Watrak	Monsoon	1710	527	51	44	146	329	149	263	81	107
		Non-Monsoon	21	14	1	0	0	0	5	15	3	4
		Annual	1731	542	52	44	146	329	155	277	85	111
6	Kheda at Watrak	Monsoon	2511	895	89	63	150	356	230	343	131	109
		Non-Monsoon	87	23	0	0	0	1	0	2	0	3
		Annual	2598	918	89	63	150	357	230	345	131	112

Source: Superintending Engineer, Mahi Division, CWC, Gandhi Nagar.

Table 5 : Sitewise Monsoon, Non-Monsoon & Annual flow of water from 2006-2007 to 2015-2016

XVI Basin : WFR of Kutch, Saurashtra Including Luni **Unit : MCM**

SNo	Site Name	Season	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Chitrasani at Balaram	Monsoon	102	47	4	5	26	123	17	29	9	120
		Non-Monsoon	1	0	0	0	0	0	1	0	0	0
		Annual	103	47	4	5	26	123	18	29	9	120
2	Abu Road at Banas	Monsoon	492	188	10	14	42	252	147	60	9	43
		Non-Monsoon	3	1	0	0	0	4	2	1	0	0
		Annual	496	190	10	14	42	257	149	61	9	43
3	Kamalpur at Banas	Monsoon	551	214	18	22	76	96	111	102	88	257
		Non-Monsoon	0	0	0	21	2	0	7	3	6	0
		Annual	551	214	18	43	78	96	117	104	94	257
4	Sarotry at Banas	Monsoon	710	324	16	6	72	513	248	108	57	374
		Non-Monsoon	9	1	0	0	0	10	5	6	0	0
		Annual	720	325	16	6	72	523	253	115	57	374
5	Ganod at Bhadar	Monsoon	795	2032	788	200	703	615	0	1078	0	381
		Non-Monsoon	0	20	12	1	0	16	0	11	0	0
		Annual	795	2052	800	201	703	632	0	1089	0	381
6	Balotra at Luni	Monsoon	98	179	0	0	0	0	0	0	0	51
		Non-Monsoon	0	0	0	0	0	0	0	0	0	0
		Annual	98	179	0	0	0	0	0	0	0	51
7	Gandhav at Luni	Monsoon	0	227	0	0	0	0	0	0	0	249
		Non-Monsoon	0	0	0	0	0	0	0	0	0	0
		Annual	0	227	0	0	0	0	0	0	0	249
8	Gungan at Machhu	Monsoon	112	613	284	7	573	634	0	118	14	42
		Non-Monsoon	0		4	0	0	0	0	1	0	0
		Annual	112	613	289	7	573	634	0	119	14	42
9	Lowara at Shetrunji	Monsoon	629	1266	1055	177	564	504	54	423	127	439
		Non-Monsoon	0	4	7	0	8	1	0	3	0	1
		Annual	629	1269	1061	177	572	506	54	426	127	440

Source: Superintending Engineer, Mahi Division, CWC, Gandhi Nagar.

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

I **Basin: Mahanadi** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed Discharge		Minimum Observed Discharge		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	Discharge (Cumecs)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Andhiyarkore	258.930	8/9/1979	694.64	253.150	5/27/2016	0.000	9/13/1998	851.98	6/1/2015	0.000	1971-2016
2	Bamnidih	228.883	8/22/1975	9583.00	224.150	10/8/2015	30.544	8/22/1975	9583.00	5/10/1980	0.864	1971-2016
3	Baronda	289.330	9/18/1980	6250.00	283.000	4/14/2015	0.000	8/7/2007	6593.80	11/9/2015	0.000	1971-2016
4	Basantpur	219.320	9/20/1980	22500.00	195.870	6/1/1971	18.900	8/30/2003	33087.95	5/22/1975	0.965	1971-2016
5	Ghatora	253.400	7/21/1994	2281.00	246.010	11/23/2013	17.704	7/21/1994	2281.00	0-05-2004	0.000	1971-2016
6	Jondhra	230.570	7/14/1994	8533.00	218.293	9/13/1979	46.600	9/20/1980	11033.30	6/1/1993	0.018	1971-2016
7	Kantamal	132.700	9/19/2008	20000.00	101.780	6/19/1972	0.100	7/28/1992	16263.00	4/29/1985	0.010	1971-2016
8	Kesinga	178.500	7/4/2006	21192.00	167.730	5/22/2009	18.164	28/07/1992	17568.00	4/6/1984	0.020	1971-2016
9	Kotni	279.610	7/12/1994	5269.00	268.820	12/2/2014	0.000	7/12/1994	5269.00	9/9/2013	0.000	1971-2016
10	Kurubhata	220.280	7/18/1995	2200.00	215.205	6/28/2010	0.270	7/18/1995	2200.00	4/26/1980	0.022	1971-2016
11	Manendragarh	420.440	7/12/1990	2088.00	411.000	4/9/2016	0.000	7/12/1990	2088.00	4/6/1996	0.000	1971-2016
12	Pathardih	544.130	5/18/2015	0.00	271.850	8/12/2001	0.500	29/07/1992	1618.00	7/6/2014	0.000	1971-2016
13	Rajim	282.680	30/08/1994	8017.00	275.000	14/02/2014	0.000	7/21/1976	9954.13	8/8/2015	0.000	1971-2016
14	Rampur	229.655	8/29/2003	10958.38	219.475	1/31/1972	0.200	8/29/2003	10958.38	12/31/2015	0.000	1971-2016
15	Salebhata	139.580	8/29/2003	7916.00	130.000	5/29/2016	0.000	8/30/1982	14545.00	5/17/1975	0.001	1971-2016
16	Seorinarayan	224.310	8/30/2003	22800.00	211.665	6/13/1997	0.576	8/30/2003	22800.00	4/26/2014	0.000	1971-2016
17	Simga	489.840	4/2/2015	0.00	245.400	5/31/2016	0.000	02/07/2007	11331.68	3/3/2015	0.000	1971-2016
18	Sundergarh	222.600	6/23/1996	6341.00	216.170	5/26/2002	0.950	9/11/1998	10404.00	4/14/2007	0.005	1971-2016
19	Tikarpara	74.570	9/10/2011	30400.00	53.330	5/19/1973	131.300	8/29/1978	30862.50	11/14/2015	0.000	1971-2016
20	Padampur	174.690	8/28/2015	193.92	171.890	7/9/2015	4.581	8/28/2015	193.92	11/21/2015	2.450	1971-2016

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

II **Basin : Subarnarekha & Burhabalang** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed Discharge		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	Discharge (Cumecs)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Adityapur	137.560	8/20/1975	6415.80	123.250	03/03/1973	1.900	8/20/1975	6415.80	10/23/1972	0.000	1971-2016
2	Ghatsila	85.050	8/17/1974	9579.59	46.020	4/20/1972	3.800	8/6/1997	10582.00	3/12/2010	0.399	1971-2016
3	Govindpur	9.240	10/14/2013	1620.00	0.500	5/25/2016	4.844	18/06/2008	2885.94	1/31/1997	0.063	1971-2016
4	Jamshedpur	126.255	9/3/1973	7673.89	113.720	4/6/1976	1.300	8/21/2013	8769.78	6/11/1972	0.000	1971-2016
5	Muri	237.500	9/24/2006	428.20	233.100	5/26/2013	0.000	9/7/1991	431.30	3/30/2013	0.000	1971-2016
6	Jamsolaghat	54.040	10/14/2013	1850.00	43.520	6/1/2011	0.000	8/13/2007	2721.35	6/29/2005	0.000	1971-2016

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

III **Basin : Brahmani & Baitarani** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	Discharge (Cumecs)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Altuma	50.150	7/21/2009	892.68	45.360	5/14/2016	0.610	8/6/1997	922.32	8/14/2012	0.000	1971-2016
2	Gomlai	147.270	8/20/2007	10794.57	138.260	5/2/2016	7.257	9/24/2011	10801.19	5/17/1982	1.110	1971-2016
3	Jaraikela	194.630	9/24/2011	3397.55	185.305	11/22/1972	25.200	8/6/1997	12539.00	10/23/2015	9.477	1971-2016
4	Jenapur	23.730	9/26/2011	10372.06	15.920	5/10/1980	4.881	9/26/2011	10372.06	6/10/2015	0.000	1971-2016
5	Panposh	181.440	9/24/2011	10947.00	170.900	2/11/2016	10.659	7/26/1996	11011.00	2/15/2011	6.484	1971-2016
6	Tilga	378.625	8/28/1987	2830.30	373.295	6/13/2012	0.326	8/28/1987	2830.30	6/24/2009	0.000	1971-2016
7	Anandpur	68.140	6/18/2008	6328.00	28.008	3/10/2013	0.008	8/19/1975	10393.90	5/9/2016	0.000	1971-2016
8	Champua	378.950	9/23/2011	1705.20	366.650	5/13/1991	3.769	9/23/2011	1705.20	1/15/2016	0.000	1971-2016

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

III **Basin : Godavari** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Ambabal	542.450	5/7/2006	2243.152	534.000	2/6/2008	0.000	1039.479	4/8/2006	0.000	18/02/2012	12/88 to 05/16
2	Betmogra	356.200	16/10/2005	1211.935	347.500	3/5/2015	0.000	1128.638	2/10/2001	0.000	8/11/2007	06/97 to 05/16
3	Bhadrachalam	50.960	03/08/2013	49187.79	32.770	2/5/2010	0.346	42755.216	10/8/2007	0.505	1/5/2010	06/07 to 05/16
4	Cherribeda	573.900	04/07/2006	2485.294	564.400	16/04/2016	0.000	579.828	13/09/2005	0.000	10/4/2013	03/96 to 05/16
5	Chindnar	340.100	5/7/2006	13350.59	327.532	26/05/1975	5.630	12223	24/7/1995	0.015	2/6/2008	06/71 to 05/16
6	Degloor	363.850	24/08/2000	2732.226	352.000	8/5/2015	0.000	2732.226	24/08/2000	0.000	3/4/2011	08/84 to 05/16
7	Dhalegaon	399.855	13/08/2006	7651.869	386.245	8/9/2011	0.000	6732	25/07/1989	0.000	5/1/2011	01/64 to 05/16
8	G.R.Bridge	378.370	14/08/2006	6221.643	364.000	10/12/2015	0.000	4763.615	25/08/2000	0.000	17/02/2011	06/76 to 05/16
9	Gandlapet	317.900	30/08/1990	1656	311.300	13/01/2008	0.000	1656	30/08/1990	0.000	26/05/2010	07/86 to 05/16
10	Jagdalpur	544.551	15/08/1986	3109.41	532.637	12/7/1965	11.569	2499.1	22/07/1976	0.000	2/6/2013	08/64 to 05/16
11	Koida	47.120	17/08/1986	70792.94	13.92	6/7/1988	85.10	57978.3	8/15/1983	53.179	5/31/2003	02/76 to 05/16
12	Konta	49.910	17/8/1986	20187.04	30.700	15/05/1967	23.812	10414.37	4/10/1968	0.000	5/8/2013	02/64 to 05/16
13	Kopergaon	490.400	31/07/2014	991.06	485.500	11/5/2015	0	991.06	31/07/2014	0.000	21/02/2015	08/14 to 05/06
14	Kosagumda	556.150	20/08/2001	893.53	547.650	10/6/2007	0.081	498.918	28/07/2004	0.000	1/5/2016	11/96 to 05/16
15	Mancherial	137.846	12/8/1983	29530.62	124.456	4/5/2010	0.000	24900	25/07/1989	0.000	12/3/2010	03/64 to 05/16
16	Murthahandi	545.090	6/8/2010	1882	533.740	31/05/2016	0	1553.625	29/07/1992	0.000	21/4/2016	02/79 to 05/16
17	Nowragpur	560.636	29/07/1969	2163.787	549.840	1/5/1999	0.000	2609.922	7/7/1973	0.000	17/05/2013	06/65 to 05/16
18	Pachegaon	481.580	26/08/1997	1363	470.000	20/06/2015	0.000	1441.044	7/8/2006	0.000	20/11/2010	12/78 to 05/16
19	Pathagudem	103.500	5/8/2006	35392.09	86.080	12/6/2003	0.000	24862.357	21/7/1976	0.000	4/6/2009	07/64 to 05/16
20	Perur	87.42	15/08/1986	62889.13	68.49	10/6/1966	15.888	57244.897	2/8/2013	1.627	03/05/2016	03/64 to 05/16
21	Polavaram	28.017	16/08/1986	57310.57	12.077	12/5/1973	70	47248.876	10/8/2007	25	20/05/1966	06/66 to 05/16
22	Potteru (Seasonal)	131.990	04/08/2006	3331.488	121.480	2/6/1997	0.013	542.8	28/08/1997	0.013	2/6/1997	03/89 to 11/16
23	Purna	371.800	27/07/2005	10811.4	358.000	20/02/2015	0	6133.277	24/07/1989	0.000	10/12/2011	06/68 to 05/16
24	Saigaon	554.443	17/08/1990	2697.282	542.723	27/02/2015	0.000	3395.2	7/10/1983	0.000	20/03/2011	08/64 to 05/16
25	Sangam	58.25	21/09/2005	970.633	51	09/03/2015	0.000	410.787	24/07/2004	0.000	27/06/2011	06/96 to 05/16
26	Saradaput	239.530	4/8/2006	6480.381	224.647	23/05/1975	6.200	7052.349	14/08/1986	5.133	09/06/1977	01/68 to 05/16
27	Somanpally(Seasonal)	127.344	24/07/1989	3360.225	118.34	9/6/1967	0.068	3457	21/07/1976	0.000	17/06/2010	07/64 to 11/16
28	Sonarpal	542.57	4/7/2006	1509.189	534.1	11/4/2002	0.000	729.3	21/09/2006	0.000	17/06/2012	07/89 to 05/16
29	Tumnar	325.977	14/06/2004	3584.01	316.937	27/05/2008	0.393	1179.319	21/08/2001	0.000	12/04/2006	03/89 to 05/16
30	Yelli	354.200	07/08/2006	12534.57	334.300	16/02/2015	0.000	9815.4	13/08/1983	0.000	26/04/2011	06/76 to 05/16
31	Zari	385.710	27/07/2005	2470.511	373.000	23/01/2015	0.000	1474	3/9/1992	0.000	28/07/2010	06/87 to 05/16

Source : SE, Godavari Circle, Central Water Commission, Hyderabad, Wainganga Division, Nagpur(2015-16).

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

V **Basin : Krishna** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Arjunwad (Seasonal)	543.685	8/5/2005	5271.520	522.451	1/16/1969	0.000	6500.000	8/20/1990	0.000	3/12/1985	1/1969 to 11/2015
2	Bawapuram	285.225	10/2/2009	36303.250	270.045	5/29/2013	0.000	8749.802	10/1/2009	0.000	28/04/2004	6/1965 to 5/2016
3	Cholachguda (Seasonal)	536.840	10/2/2009	2747.302	522.880	8/25/2004	0.000	1472.000	6/29/1991	0.000	4/29/1996	6/1982 to 11/2015
4	Dameracherla	62.500	05/10/2009	4300.000	54.420	8/7/2015	0.000	5762.000	10/6/1983	0.000	6/30/2004	6/1968 to 5/2016
5	Doddipadu	288.853	9/11/2015	86.290	287.683	9/13/2015	0.000	74.806	9/11/2015	0.000	6/5/2015	11/2014 to 5/2016
6	Gokak Falls (Seasonal)	546.880	9/23/2005	2266.452	537.990	6/17/2012	0.000	3147.000	8/10/1979	0.000	2/22/1995	7/1971 to 11/2015
7	Halia	133.570	10/25/2013	2085.000	127.900	7/7/2006	0.000	1125.800	10/25/2013	0.000	4/24/2013	6/1984 to 5/2016
8	Huvinhedigi	358.420	10/2/2009	15095.150	341.958	5/11/1979	0.800	13908.769	10/2/2009	0.100	05/05/1981	2/1976 to 5/2016
9	Karad	567.162	6/7/1976	8938.000	549.775	5/15/2006	0.000	6312.000	03/08/2005	0.000	6/2/1973	6/1965 to 5/2016
10	Keesara	35.810	7/24/1989	14128.180	27.595	6/6/1979	0.000	5179.700	8/15/1978	0.000	5/21/1973	6/1965 to 5/2016
11	Kurundwad	539.760	8/5/2005	9797.981	519.795	4/27/1977	0.000	7786.000	7/29/2005	0.000	17/12/1988	5/1972 to 5/2016
12	Madhira	52.010	9/20/2005	3048.408	44.180	9/25/2009	0.000	1306.000	9/22/1991	0.000	22/04/2005	6/1984 to 5/2016
13	Malkhed	400.910	8/16/1990	5007.121	391.950	7/20/2001	0.162	2215.000	10/15/1998	0.000	6/24/1995	8/1990 to 5/2016
14	Mantralayam	318.770	10/2/2009	18882.310	305.560	4/15/2016	0.000	8504.000	9/30/1978	0.000	3/23/2004	6/1972 to 5/2016
15	Narasingpur	462.393	8/10/2006	8873.277	448.013	12/5/2004	0.000	7601.800	8/17/1983	0.000	3/11/1997	12/1966 to 5/2016
16	Paleru Bridge	73.857	10/26/2014	184.900	71.512	7/13/1984	0.000	2249.500	10/6/1983	0.000	7/28/2014	5/1964 to /5/2016
17	Phulgaon (Seasonal)	93.950	8/23/1997	5998.052	81.005	5/7/1991	0.000	3028.500	7/27/2005	0.000	5/19/1999	6/1992 to 11/2015
18	Sadalga (Seasonal)	538.950	6/29/1983	2457.294	525.080	4/26/1966	0.000	1759.000	7/11/1975	0.000	3/9/1991	6/1969 to 11/2015
19	Samdoli (Seasonal)	546.324	8/5/2005	3064.000	529.104	3/15/1975	0.000	2412.000	7/27/1989	0.000	3/10/1983	12/1966 to 11/2015
20	Sarati	476.788	8/2/1976	3232.886	466.133	8/14/2012	0.000	2757.100	8/2/1976	0.000	6/28/1993	6/1965 to 5/2016
21	T Ramapuram (Seasonal)	356.478	10/2/2009	3720.143	349.068	1/10/2016	0.000	3192.044	10/2/2009	0.000	5/8/2001	12/1965 to 11/2015
22	Takli	423.718	8/12/2006	7661.959	408.745	4/20/2016	0.000	8333.000	7/31/1967	0.000	5/14/1996	6/1965 to 5/2016
23	Talikot (Seasonal)	56.660	10/1/2009	1202.298	48.005	4/16/1994	0.000	887.056	03/10/2009	0.000	7/7/2002	9/1995 to 11/2015
24	Terwad (Seasonal)	540.390	8/6/2005	3340.000	520.170	6/2/1985	0.000	2183.000	7/29/1991	0.000	6/2/1985	8/1979 to 11/2015
25	Vijayawada	19.332	10/5/2009	28140.000	8.512	7/23/1997	13.520	25082.000	10/16/1998	0.000	2/22/2012	6/1965 to 5/2016
26	Wadakbal	428.563	9/29/1989	3270.743	418.278	5/10/1978	0.000	2746.000	9/29/1989	0.000	5/26/1992	6/1965 to 5/2016
27	Wadenapally	42.494	10/5/2009	31836.000	23.164	1/27/2016	0.000	23689.000	10/16/1998	0.000	6/25/2014	12/1965 to 5/2016
28	Warunji	568.047	30/07/2006	4900.641	550.537	2/4/1973	0.000	4641.000	8/2/2005	0.000	4/22/1971	1/1966 to 5/2016
29	Yadgir	361.913	9/7/1969	10609.860	348.903	5/31/1973	0.000	10254.510	9/7/1969	0.000	4/24/1998	6/1965 to 5/2016
30	Byladahalli	536.450	11/17/1992	1045.000	528.210	10/4/2003	0.000	339.900	11/2/2012	0.000	7/24/2003	3/1985 to 5/2016
31	Haralahalli	518.346	11/18/1992	7120.000	506.456	08/05/2016	0.000	4559.300	04/08/1982	0.000	1/9/2004	8/1965 to 5/2016
32	HOLEHONNUR	562.215	8/2/2013	1280.000	89.250	06/01/2007	1.205	1004.498	8/9/2007	0.000	1/16/2010	11/1997 to 5/2016
33	Honnali	546.470	7/16/1994	6760.000	87.380	3/29/1986	3.900	6732.000	8/14/2008	0.000	4/1/2004	06/1978 to 5/2016
34	Hoovinahole	96.150	9/6/2008	111.900	93.660	12/29/2015	0.000	75.133	11/3/2010	0.000	6/25/2007	11/1997 to 5/2016
35	Kellodu	650.700	11/12/2010	360.200	97.490	1/27/2006	0.000	399.200	10/23/2000	0.000	4/1/2003	06/1990 to 5/2016
36	Kuppelur	541.900	8/8/2007	787.400	93.005	3/27/1994	0.000	430.000	7/17/1994	0.000	15/04/2001	06/1990 to 5/2016
37	Marol	517.601	11/18/1992	1675.000	507.561	2/22/1990	0.000	1234.500	7/3/1980	0.000	2/11/1992	02/1965 to 5/2016
38	Shimoga	567.950	8/2/2014	3236.000	557.000	4/29/1983	0.000	4124.100	8/3/1982	0.000	4/26/2003	06/1971 to 5/2016

Source : SE. Godavari & Krishna Circle during the Year (2015-2016) Krishna Basin ,

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

VI **Basin : Cauvery** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Akkihebbal	748.22	8/25/2015	159.25	746.63	5/11/2016	0	159.25	8/25/2015	0	5/11/2016	2015-16
2	Annavasal	5.13	11/10/2015	8.156	4.625	1/2/2016	0	8.156	11/10/2015	0	9/28/2015	2015-16
3	Bendrahalli	633.73	11/11/2015	17.83	631.3	4/29/2016	0	17.83	11/11/2015	0	2/29/2016	2015-16
4	Biligundulu	260.4	11/6/2015	1060.58	257.58	4/8/2016	5.469	1060.58	11/6/2015	5.469	4/8/2016	2015-16
5	Chunchunkatte	756	6/28/2015	483.2	751.42	5/4/2016	0	483.2	6/28/2015	0	2/25/2016	2015-16
6	Elunuthimangalam	131.7	11/1/2015	30.59	129.47	9/19/2015	0	101.438	12/7/2015	0	3/20/2016	2015-16
7	Gopurajapuram	2.58	12/8/2015	28.786	-0.13	8/22/2015	0	31.429	12/10/2015	0	10/18/2015	2015-16
8	Hogenakkal	253.4	11/10/2015	40.14	252.22	9/28/2015	0.019	40.14	11/10/2015	0	7/26/2015	2015-16
9	K.M.Vadi	769.54	6/28/2015	197.3	765.9	8/9/2015	0	352.728	6/25/2015	0	2/14/2016	2015-16
10	Kodumudi	124.45	11/5/2015	903.025	121.95	7/5/2015	0	903.025	11/5/2015	0	7/5/2015	2015-16
11	Kollegal	625.65	7/21/2015	680.843	624.22	4/9/2016	0	806.821	9/26/2015	0	3/18/2016	2015-16
12	Kudige	817.08	6/27/2015	918.2	810.82	3/27/2016	0.315	918.2	6/27/2015	0.264	3/29/2016	2015-16
13	Kudlur	435.16	7/8/2015	0	436	8/18/2015	21.289	21.289	8/18/2015	0	8/24/2015	2015-16
14	M.H.Halli	839.66	8/24/2015	174.452	837.82	3/10/2016	0	174.452	8/24/2015	0	7/12/2015	2015-16
15	Menangudi	7.078	10/15/2015	3.749	5.25	5/19/2016	0	12.895	12/3/2015	0	10/21/2015	2015-16
16	Musiri	82.38	11/6/2015	683.855	80.555	3/4/2016	11.284	683.855	11/6/2015	1.476	7/12/2015	2015-16
17	Muthankera	710.88	6/27/2015	792.728	707.15	5/3/2016	0.996	792.728	6/27/2015	0.752	6/3/2015	2015-16
18	Nallamaranpatty	130.79	12/7/2015	671.964	128.02	10/22/2015	0	671.964	12/7/2015	0	11/6/2015	2015-16
19	Nallathur	4.445	11/23/2015	56.358	1.8	7/3/2015	0	56.358	11/23/2015	0	10/29/2015	2015-16
20	Nellithurai	302.88	6/19/2015	0.808	306.65	10/16/2015	0	647.828	6/25/2015	0	2/6/2016	2015-16
21	Peralam	8.61	11/23/2015	2.784	7.02	3/9/2016	0	2.784	11/23/2015	0	6/10/2015	2015-16
22	Porakudi	5.05	12/8/2015	35.538	2.18	5/10/2016	0	44.8	11/10/2015	0	11/4/2015	2015-16
23	Sakleshpur	891.47	6/22/2015	360.165	886.8	3/30/2016	0.121	360.165	6/22/2015	0.103	3/14/2016	2015-16
24	Savandapur	180.68	6/15/2015	2.342	182.15	10/12/2015	137.954	137.954	10/12/2015	2.302	5/25/2016	2015-16
25	Sevanur	170.52	2/28/2016	0	171.6	11/5/2015	22.973	22.973	11/5/2015	0	7/14/2015	2015-16
26	T.Bekuppe	605.75	9/8/2015	30.36	604.4	3/29/2016	2.559	30.36	9/8/2015	2.559	3/29/2016	2015-16
27	T.K. Halli	585.22	11/5/2015	449.2	580.48	4/23/2016	0	449.2	11/5/2015	0	2/13/2016	2015-16
28	T. Narasipur	636.97	6/30/2015	388.428	634.03	2/20/2016	0	388.428	6/30/2015	0	2/8/2016	2015-16
29	Thengudi	8.4	11/10/2015	33.75	5.535	7/5/2015	0	39.388	12/5/2015	0	4/5/2016	2015-16
30	Thengumarahada	338.5	5/21/2016	1.638	339.41	6/24/2015	38.301	38.301	6/24/2015	1.638	5/21/2016	2015-16
31	Thevur	170	9/4/2015	0	171.98	10/12/2015	5.798	5.798	10/12/2015	0	8/28/2015	2015-16
32	Thimmanahalli	906.5	11/2/2015	35.009	905.225	5/4/2016	0	35.009	11/2/2015	0	5/4/2016	2015-16
33	Thoppur	324.065	12/8/2015	3.981	322.87	5/20/2016	0	3.981	12/8/2015	0	9/29/2015	2015-16
34	Urachikottai	157.89	3/4/2016	0	160.4	8/30/2015	565.9	565.9	8/30/2015	0	12/6/2015	2015-16
35	Gandhavayal	93.95	11/20/2015	36.77	92.69	5/4/2016	0	36.77	11/20/2015	0	5/15/2016	2015-16

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

VII Basin : Pennar **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Nellore	11.845	11/17/2015	1388.267	7.83	5/15/2016	0	1388.267	11/17/2015	0	5/1/2016	2015-16
2	Nandipalli	97.98	11/17/2015	136.344	95.05	1/27/2016	0	136.344	11/17/2015	0	10/10/2015	2015-16
3	Chennur	118.085	9/27/2015	487.841	115.895	2/20/2016	0	487.841	9/27/2015	0	6/27/2015	2015-16
4	Kamalapuram	135.4	11/21/2015	60.318	134.41	12/23/2015	0	60.318	11/21/2015	0	10/25/2015	2015-16
5	Alladupalli	135.545	9/12/2015	257.858	133.125	11/9/2015	0	257.858	9/12/2015	0	11/16/2015	2015-16
6	Singavaram	Dry Bed										2015-16
7	Tadipattri	Dry Bed										2015-16
8	Nagalamedike	Dry Bed										2015-16

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

VIII Basin : EMP (East Flowing Rivers from Mahanadi to Pennar) **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Ankapali	27.480	11/4/2012	3981.00	19.600	6/1/2001	0.000	11/4/2012	3980.54	8/11/2005	0.000	1971-2016
2	Gunupur	85.950	8/7/2007	2987.41	79.380	5/9/2009	1.600	7/29/1991	5285.60	6/4/2003	0.000	1971-2016
3	Kashinagar	57.850	8/7/2007	7321.54	50.790	4/17/1981	3.400	8/7/2007	7321.54	6/3/2003	0.000	1971-2016
4	Purushottampur	18.640	10/25/2013	3750.00	12.000	10/15/2015	31.211	10/24/2013	3432.52	4/2/2007	0.000	1971-2016
5	Srikakulam	14.085	8/4/2006	5624.74	7.150	2/26/2016	0.441	04.08.2006	5624.74	5/3/1994	0.000	1971-2016

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

IX **Basin : EPK (East Flowing Rivers from Pennar to Kayakumari)** **Unit : MCM**

Sl No.	site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge	Date	Discharge	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	A.P.Puram	65.5	11/24/2015	67.53	63.135	10/15/2015	0	67.53	11/24/2015	0	9/10/2015	2015-16
2	Ambasamudram	297.325	12/3/2015	56.946	295.87	1/30/2016	0	56.946	12/3/2015	0	9/6/2015	2015-16
3	Arcot	159.755	11/25/2015	219.143	157.17	3/12/2016	0	219.143	11/25/2015	0	8/17/2015	2015-16
4	Avaranakuppam	366.225	11/16/2015	12.035	365.425	1/10/2016	0	12.035	11/16/2015	0	11/3/2015	2015-16
5	Chengalpet	28.2	12/3/2015	2657.032	25.25	4/6/2016	0	2657.032	12/3/2015	0	8/22/2015	2015-16
6	Irrukkankudi	Dry Bed										2015-16
7	Kudalaiyathur	16.5	12/7/2015	997.296	12.72	12/26/2015	0	997.296	12/7/2015	0	10/11/2015	2015-16
8	Kumarapalayam	13.86	12/2/2015	785.475	8.4	4/12/2016	0	785.475	12/2/2015	0	8/31/2015	2015-16
9	Magaral	59.73	11/14/2015	186	56.875	12/19/2015	5.348	1037	12/3/2015	0	8/26/2015	2015-16
10	Murappandu	19.105	12/9/2015	428.4	14.795	5/26/2016	2.103	428.4	12/9/2015	1.846	9/1/2015	2015-16
11	Naidupeta	24.16	11/23/2015	992.109	20.39	2/17/2016	0	1100.085	11/17/2015	0	10/17/2015	2015-16
12	Paramakudi	38.43	12/7/2015	41.547	37.04	2/12/2016	0	41.547	12/7/2015	0	9/11/2015	2015-16
13	Sulurpet	6.62	11/16/2015	874.457	0.62	2/19/2016	0	874.457	11/16/2015	0	10/17/2015	2015-16
14	Theni	280.85	11/19/2015	162.099	278.74	6/15/2015	0	162.099	11/19/2015	0	4/20/2016	2015-16
15	Vazhavachanur	135.655	12/7/2015	184.215	133.62	7/13/2015	0	184.215	12/7/2015	0	9/1/2015	2015-16
16	Villupuram	42.08	12/8/2015	527.1	39.46	11/17/2015	0	527.1	12/8/2015	0	9/30/2015	2015-16
17	Gummanur	137	11/17/2015	1229	134.57	3/4/2016	0	1229	11/17/2015	0	9/25/2015	2015-16

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore,

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

X **Basin : Narmada** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum observed Discharge		Minimum Observed Discharge		Refrence Period
		Water Level (m)	Date	Discharge (cumec)	Water Level (m)	Date	Discharge (cumec)	Discharge (cumec)	Date	Discharge (cumec)	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Narmada at Dindori	66.13	23.06.2015	908.88	662.56	10.05.2016	0.61					
2	Narmada at Manot	448.99	04.08.2015	1178.44	442.61	27.05.2016	0.01					
3	Burhner at Mohgaon	455.175	04.08.2015	1805.80	449.10	24.05.2016	0.09					
4	Banjar at Bamni	443.22	05.08.2015	301.19	440.06	01.05.2016	0.00					
5	Hiran at Paten	347.18	04.08.2015	380.45	341.51	11.04.2016	0.06					
6	Sher at Belkhedi	344.41	04.08.2015	451.45	341.04	14.05.2016	0.24					
7	Narmada at Barmanghat	313.94	05.08.2015	1881.21	307.38	13.04.2016	24.80					
8	Shakkar at Gadarwada	324.54	14.08.2015	493.83	322.23	03.03.2015	0.01					
9	Narmada at Sandia	305.32	05.08.2015	2982.30	299.25	03.03.2016	40.26					
10	Narmada at Hoshangabad	288.85	15.08.2015	4100.00	284.32	20.11.2015	86.01					
11	Ganjal at Chhidgaon	292.1	05.08.2015	1003.84	287.40	02.03.2016	0.00					
12	Narmada at Handia	266.625	23.01.2016	5371.43	260.70	04.04.2016	72.80					
13	Kundi at Kogaon	156.05	06.08.2015	1274.15	152.58	17.10.2015	1.77					
14	Narmada at Mandleshwar	142.12	17.08.2015	2311.07	139.42	30.05.2016	138.94					
15	Uri at Dhulsar	153.02	27.07.2015	184.41	151.30	10.09.2015	0.46					
16	Goi at Pati	190.54	19.09.2015	98.99	188.97	06.07.2015	0.76					
17	Narmada at Garudeshawar	18.74	07.8.2015	4804.96	13.54	07.07.2015	17.93					
18	Orsang at Chandwada	20.70	28.07.2015	470.64	18.15	12.09.2015	2.02					
19	Narmada at Bijora	368	26.08.2015	216.00	368	02.06.2015	10.42					

Source SE(C),Govt. of India, CWC, Office of the Chief Eng., Narmada Basin Oraganistion, Bhopal (MP).

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

XI **Basin : Tapi** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum observed Discharge		Minimum Observed Discharge		Refrence Period
		Water Level (m)	Date	Discharge (cumec)	Water Level (m)	Date	Discharge (cumec)	Discharge (cumec)	Date	Discharge (cumecs)	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Dedtalai	281.350	8/5/2015	4024.20	271.690	5/9/2016	0.00	2088.49	8/6/2015	0	42376	2015-16
2	Burhanpur	235.200	8/5/2015	12938.00	214.920	6/11/2015	0.00	1929.559	8/7/2015	0	42400	2015-16
3	Gopalkheda	252.450	8/6/2015	3598.11	236.010	5/7/2016	0.00	1148.659	8/7/2015	0	42408	2015-16
4	Yerli	226.250	8/7/2015	4995.67	214.000	11/21/2015	0.00	672.993	8/8/2015	0	42196	2015-16
5	Gidhade	135.000	8/6/2015	9885.93	123.400	8/20/2015	0.00	4333.297	8/8/2015	0	42425	2015-16
6	Sarangkheda	118.500	8/6/2015	7553.08	109.200	20/03/2016	0.00	7553.08	8/6/2015	0	42365	2015-16
7	Motinaroli	15.000	7/28/2015	538.43	7.720	1/18/2016	0.00	538.425	7/28/2015	0	12/26/2015	2015-16
8	Pingalwada	7.270	7/30/2015	40.57	5.300	5/3/2016	1.54	40.57	7/30/2015	1.542	5/3/2016	2015-16

Source: SE, Tapi Division, CWC, Gandhi Nagar.

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

XII Basin : WTT (West Flowing Rivers from Tapi to Tadri) **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level(m)	Date	Discharge (Cumecs)	Discharge	Date	Discharge	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Santeguli	14.13	7/20/2015	449.623	10.12	5/14/2016	0	449.623	7/20/2015	0	5/13/2016	2015-16
2	Gadat	8.250	9/19/2015	1226.73	3.180	2/8/2016	0.00	1226.727	9/19/2015	0	10/19/2015	2015-16
3	Durvesh	7.170	7/22/2015	1474.99	0.740	5/29/2016	0.00	1474.99	7/22/2015	0	12/25/2015	2015-16
4	Nanipalson	99.000	7/29/2015	269.08	96.360	7/16/2015	0.00	269.078	7/29/2015	0	3/23/2016	2015-16
5	Ozerkheda	84.000	7/28/2015	251.67	81.220	5/30/2016	2.61	251.672	7/28/2015	9.73	6/15/2015	2015-16
6	Mahuwa	12.400	9/19/2015	547.97	0.850	4/17/2016	0.00	547.97	9/19/2015	0	4/17/2016	2015-16

Source : SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

XIII Basin : WTK (West Flowing Rivers from Tadri to Kanyakumari) **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed		Minimum Observed		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level(m)	Date	Discharge (Cumecs)	Discharge	Date	Discharge	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Addoor	4.51	7/20/2015	629.934	-0.06	5/28/2016	0	903.5	6/26/2015	0	12/11/2015	2015-16
2	Ambarampalayam	220.54	12/9/2015	116.908	219.01	10/19/2015	0.355	116.908	12/9/2015	0.355	10/19/2015	2015-16
3	Arangaly	3.91	6/27/2015	531.54	0.32	1/18/2016	2.766	531.54	6/27/2015	0.095	6/2/2015	2015-16
4	Ashramam	4.9	10/9/2015	103.7	2.02	7/8/2015	0	103.7	10/9/2015	0	6/2/2015	2015-16
5	Avershe	14.13	7/19/2015	343.5	9.78	4/19/2016	0	343.5	7/19/2015	0	3/14/2016	2015-16
6	Ayilam	5.71	6/28/2015	307.6	0.33	5/10/2016	0	307.6	6/28/2015	0	4/27/2016	2015-16
7	Bantwal	6.58	7/20/2015	2159	1	5/9/2016	0	2159	7/20/2015	0	3/11/2016	2015-16
8	Erinjipuzha	17.27	7/18/2015	704.8	11.09	5/13/2016	0	772.949	7/20/2015	0	4/13/2016	2015-16
9	Haladi	5.01	7/20/2015	391.045	0.92	6/6/2015	1.094	391.045	7/20/2015	0.296	5/8/2016	2015-16
10	Kalampur	11.74	6/27/2015	215.575	7.54	3/23/2016	0	218.196	8/13/2015	0	4/7/2016	2015-16
11	Kallooppara	5.84	6/28/2015	483.9	0.7	3/11/2016	0	483.9	6/28/2015	0	3/3/2016	2015-16
12	Karathodu	8.52	6/27/2015	436.971	2.03	5/28/2016	0	436.971	6/27/2015	0	1/22/2016	2015-16
13	Kidangoor	5.68	6/28/2015	450.2	0.14	4/10/2016	0	450.2	6/28/2015	0	2/19/2016	2015-16
14	Kumbidi	6.97	6/28/2015	1131	2.73	5/7/2016	0	1296.865	6/27/2015	0	3/22/2016	2015-16
15	Kuniyil	5.23	6/24/2015	1344.54	1.48	5/9/2016	0	1539.398	6/23/2015	0	1/10/2016	2015-16
16	Kuttyadi	5.22	6/28/2015	432.4	0.6	4/18/2016	2.025	432.4	6/28/2015	1.627	1/12/2016	2015-16
17	Kuzhithurai	4.6	6/28/2015	162.166	0.13	5/4/2016	0	162.166	6/28/2015	0	4/20/2016	2015-16
18	Malakkara	3.92	6/28/2015	619.9	0.01	4/4/2016	0	619.9	6/28/2015	0	2/21/2016	2015-16
19	Mankara	49.035	6/27/2015	308.127	47.01	5/4/2016	0	308.127	6/27/2015	0	4/30/2016	2015-16
20	Neeleswaram	4.63	6/27/2015	1725.936	0.13	1/10/2016	0	1725.936	6/27/2015	0	2/18/2016	2015-16
21	Pattazhy	5.68	6/28/2015	335.031	0.7	2/6/2016	0	335.031	6/28/2015	0	2/5/2016	2015-16
22	Perumannu	12.135	6/23/2015	1295.73	6.11	3/2/2016	0.544	1295.73	6/23/2015	0.384	5/5/2016	2015-16
23	Pudur	62.04	12/7/2015	146.9	59.18	5/6/2016	0	146.9	12/7/2015	0	4/29/2016	2015-16
24	Pulamanthole	14.5	6/27/2015	401.198	12.42	5/2/2016	0	401.198	6/27/2015	0	5/7/2016	2015-16
25	Ramamangalam	4.96	6/28/2015	715.9	0.51	2/3/2016	32.832	740.86	6/27/2015	32.832	2/3/2016	2015-16
26	Thumpamon	9.153	11/5/2015	223.779	5.26	3/23/2016	0	236.8	6/28/2015	0	3/19/2016	2015-16
27	Vandiperiyar	792.885	6/27/2015	49.467	791.01	5/5/2016	0	58.89	12/8/2015	0	5/5/2016	2015-16
28	Yennehole	21.2	7/18/2015	596.4	16.99	5/12/2016	0	610.721	7/10/2015	0	3/5/2016	2015-16

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore,

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

XIV **Basin : Mahi** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed Discharge		Minimum Observed Discharge		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Anas at Chakaliya	226.9	11/08/2006	5473.966	0	1/1/2001	0	6956.497	7/28/2005	0	11/9/2001	2015-16
2	Jakham at Dhariawad	209.35	8/11/2006	1979.941	0	11/20/1989	0	1979.941	8/11/2006	0	3/1/2003	2015-16
3	Machhundri at Una	19.8	6/24/2015	498.74	16.035	2/26/2016	0	7.959	9/21/2015	0	11/19/2005	2015-16
4	Mahi at Khanpur	26.82	8/12/2006	31061.914	7.9	2/23/2002	7.9	31061.914	8/12/2006	1.49	3/15/2003	2015-16
5	Mahi at Mataji	307	10/4/1988	8387	0	6/7/1984	0	10257	7/28/1996	0	5/1/2001	2015-16
6	Mahi at Paderdibadi	147.525	8/19/2006	16153.253	0	5/1/1980	0	16153.253	8/19/2006	0	2/4/2001	2015-16
7	Som at Rangeli	158.24	8/19/2006	5179.314	0	7/6/1979	0	5179.314	8/19/2006	0	5/15/2002	2015-16

Source: Superintending Engineer, Mahi Division, CWC, Gandhi Nagar.

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

XV **Basin : Sabarmati** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed Discharge		Minimum Observed Discharge		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		(13)
1	Deril Bridge	94.73	8/20/1994	3050	0	3/12/2000	0	3128.703	7/30/2015	0	1/29/2003	2015-16
2	Kheroj	215.45	8/19/2006	1402	0	11/22/1999	0	8350.62	7/29/2015	0	12/29/2002	2015-16
3	Ratanpur (Gadvel)	44.98	8/12/2006	3732.154	0	1/2/1998	0	3732.154	8/12/2006	0	5/20/2001	2015-16
4	Voutha	20.97	8/21/2006	3176	12	10/2/2001	0	4957.75	7/10/2007	0	10/18/2001	2015-16
5	Kheda	28.2	8/25/1990	1626	0	10/14/1989	0	4507.513	8/12/2006	0	4/3/1997	2015-16
6	Kotra(Jotasan)	291.55	8/20/2006	1339.665	0	5/20/1997	0	1339.665	8/20/2006	0	6/1/2001	2015-16

Table 6: Site wise Maximum & Minimum Observed Water level and Discharge in River Basins till 2015-16

XVI **Basin : WKS (West Flowing Rivers of Kutch & Saurashtra including Luni)** **Unit : MCM**

Sl No.	Site Name	Maximum Water Level			Minimum Water Level			Maximum Observed Discharge		Minimum Observed Discharge		Refrence Period
		Water Level (m)	Date	Discharge (Cumecs)	Water Level (m)	Date	Discharge (Cumecs)	Discharge (Cumecs)	Date	Discharge (Cumecs)	Date	
,(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		(13)
1	Luni at Gandhav	38.88	7/19/1979	4300	0	2/9/1982	0	4300	7/19/1979	0	8/15/1988	2015-16
2	Luni at Balotra	107.15	7/6/1990	1875	0	10/19/1995	0	2907	9/9/1992	0	1/31/1998	2015-16
3	Balaram at Chitrasani	188.1	7/29/2015	625.457	0	5/1/1999	0	625.457	7/29/2015	0	1/31/2000	2015-16
4	Banas at Kamalpur	38.555	9/7/1973	280	0	10/29/1990	0	4221	9/8/1992	0	10/1/1989	2015-16
5	Banas at Sarotry	190.78	9/8/1992	2672	0	9/17/1999	0	2672	9/8/1992	0	9/15/2000	2015-16
6	Banas at Abu Road	258.397	9/8/1992	1164	0	4/15/2001	0	1164	9/8/1992	0	6/19/1999	2015-16
7	Shetrunji at Lowara	66.93	11/9/1982	880	0	12/10/1991	0	2441	6/29/2005	0	4/20/1989	2015-16
8	Bhadar at Ganod	34.1	6/22/1983	2750	0	12/26/1992	0	4160	7/27/1988	0	1/26/1992	2015-16
9	Machhu at Gungan	16.505	7/19/2011	2650.36	0	6/16/1989	0	2681	7/28/1988	0	1/11/1989	2015-16
10	Rupen at Sapawada	43	6/27/1997	325	0	7/24/1997	0	964.3	8/3/1994	0	8/25/1996	2015-16
10	Rupen at Sapawada	43	6/27/1997	325	0	7/24/1997	0	964.3	8/3/1994	0	8/25/1996	2015-16

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

I **Basin : Mahanadi** ***Unit: M. C. M.***

Sl. No.	Site Name	Period	Dependable Flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ANDHIARKHORE	06/1986 to 05/2016	646.300	537.980	504.799	434.380	273.639	222.718	216.341	209.942	177.688	110.945	39.719
2	BAMNIDHI		4306.416	3978.580	3595.448	3346.544	2877.600	2405.553	2203.991	1888.170	1726.001	1559.333	1109.294
3	BARONDA	12/1986 to 05/2016	2787.988	1946.034	1889.762	1852.534	1701.209	1389.385	1233.245	1020.973	937.629	935.226	664.420
4	BASANTPUR	06/1986 to 05/2016	27107.734	26255.338	25380.229	24954.875	24602.453	23421.277	21716.520	20356.111	18685.031	15690.605	13603.903
5	GHATORA		1093.540	1036.204	973.259	932.623	875.051	742.248	566.576	502.257	473.640	416.552	241.103
6	JONDHRA		17546.928	15160.135	13575.676	12427.814	11270.358	10673.682	9654.307	8030.100	6721.953	4959.254	3574.652
7	KANTAMAL		20758.400	17701.738	17049.797	16066.619	13697.328	11994.719	10742.464	9605.985	9302.865	9267.764	6886.447
8	KESINGA		14198.287	12048.471	11114.420	10605.816	10331.022	8788.322	6874.120	6474.501	6414.940	6352.959	4851.353
9	KOTNI		3955.781	2714.762	2678.989	2567.627	2283.803	2061.020	1897.985	1833.251	1575.014	1047.101	457.574
10	KURUBHATA		3078.287	2242.801	2144.645	2053.949	1897.841	1778.036	1703.841	1635.877	1527.029	1334.497	1006.211
11	MANENDRAGARH		418.963	382.495	336.431	313.460	292.193	262.983	245.830	200.957	177.321	159.627	149.902
12	PATHARDIH	01/1989 to 05/2016	1723.121	1575.341	1405.414	1323.192	1266.239	1162.875	1071.261	1006.735	931.197	790.502	583.273
13	RAJIM	06/1986 to 05/2016	4678.417	3976.770	3808.441	3686.746	3561.744	3160.870	2774.395	2219.489	1949.844	1870.414	1551.482
14	RAMPUR		2147.280	1710.745	1474.064	1352.004	1296.193	1149.145	1017.303	1002.365	940.728	808.000	695.398
15	SALEBHATA		4130.969	3489.323	3086.684	2726.853	2250.991	2067.032	1855.689	1762.376	1583.285	1200.370	1013.117
16	SEORINARAYAN		22357.533	21262.361	21192.373	21107.527	20571.646	19221.535	17646.123	15292.122	13532.412	11350.333	10514.149
17	SIMGA		9390.096	8947.665	8053.847	7584.877	6866.868	5904.654	5283.950	4786.264	4184.939	3006.869	2071.134
18	SUNDERGARH		4116.323	3226.401	3152.588	3051.033	2832.678	2597.555	2399.110	2247.370	2161.334	2081.913	1898.932
19	TIKARPARA		67784.125	60558.605	56748.934	54004.148	49815.504	46947.242	46132.941	45361.879	44801.641	43866.742	39718.715

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

II **Basin : Subarnarekha & Burhabalang** ***Unit: M. C. M.***

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ADITYAPUR	06/1986 to 05/2016	4874.890	4420.635	3996.858	3705.253	3368.987	3072.940	2512.738	2173.704	1911.968	1390.468	330.371
2	ANANDPUR		8420.461	6646.128	6229.250	5869.815	5399.282	5270.461	4665.521	3220.112	2730.959	2648.591	1438.333
3	CHAMPUA	07/1990 to 05/2016	1722.818	1617.979	1483.140	1370.284	1221.063	1160.971	1106.453	864.210	767.727	760.119	471.301
4	GHATSILA	06/1986 to 05/2016	13683.454	11697.841	10991.639	10503.873	9674.024	8275.454	7269.387	6804.600	5773.494	3774.461	1975.560
5	GOVINDPUR	03/1992 to 05/2016	6577.292	5018.170	4793.108	4661.128	4500.841	4010.362	3376.426	3109.324	2819.776	2258.600	1871.193
6	JAMSHEDPUR	06/1986 to 05/2016	9255.310	9191.787	9186.275	9044.722	8582.487	7754.289	6046.103	4836.262	4085.492	2891.454	961.152
7	MURI	11/1989 to 05/2016	741.597	724.008	714.594	704.615	570.944	385.466	326.379	282.657	267.996	242.920	89.487

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

III **Basin : Brahmani & Baitarani** ***Unit: M. C. M.***

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALTUMA	07/1990 to 05/2016	879.344	819.227	785.484	761.454	730.978	683.632	647.797	587.239	547.044	513.336	267.541
2	GOMLAI	06/1986 to 05/2016	16089.940	15375.755	13990.076	13356.240	12321.675	10718.795	9223.466	7255.399	6692.595	6410.949	3372.327
3	JARAIKELA		5752.533	5220.939	4966.397	4699.505	3732.230	2757.417	2632.882	2325.964	2022.488	1599.298	1119.027
4	JENAPUR		22472.896	21500.355	20383.031	18876.344	16280.853	15847.410	15209.274	14263.163	13257.169	11557.579	5958.434
5	PANPOSH		17732.990	13286.461	12480.408	11992.285	11086.563	10005.116	9060.767	7517.073	6964.943	6705.771	3539.538
6	TILGA		2596.748	2215.633	2058.716	1964.925	1893.127	1816.042	1758.040	1662.298	1614.984	1594.889	967.609

Source : Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 7 : Annual dependable flow of water by site and river basin for the last 30 years (1986-2016)

IV Basin : Godavari *Unit: M. C. M.*

Sl No.	Site Name	Period	Dependable Flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Ambabal	6/1993 to 5/2016	1439.399	1143.983	1113.185	997.877	855.408	748.281	620.050	555.927	523.155	504.762	429.382
2	Betmogrra	6/1997 to 5/2016	444.061	341.797	247.599	236.281	222.914	157.934	49.341	30.477	27.155	15.302	0.000
3	Bhadrachalam	6/2007 to 5/2016	Sufficient data not available										
4	Cherribeda	6/1996 to 5/2016	1213.769	973.538	967.169	937.187	835.640	620.785	444.857	371.840	330.225	296.501	235.647
5	Chindnar	6/1986 to 5/2016	13983.524	10863.849	10597.555	10000.379	8900.592	7878.154	7602.539	6309.883	5872.354	5366.930	4580.949
6	Degloor	6/1987 to 5/2016	690.434	476.310	436.009	385.826	283.070	227.221	133.196	100.394	76.040	64.532	24.815
7	Dhalegaon	6/1986 to 5/2012	5673.671	4472.096	4295.495	3694.421	2831.779	1690.673	981.623	699.840	517.125	305.178	192.918
8	G.R.Bridge	6/1986 to 5/2016	4503.413	3153.071	2601.994	1574.262	1017.902	735.528	554.134	398.164	327.052	222.264	114.671
9	Gandlapet	7/1986 to 5/2016	527.743	226.740	203.322	186.072	80.035	53.457	20.953	6.408	3.201	2.907	0.000
10	Jagdalpur	6/1986 to 5/2016	4705.534	3808.577	3685.510	3449.011	3045.351	2694.387	2474.563	2264.234	2159.915	1900.924	1337.419
11	Kiwaibalenga	11/2005 to 5/2016	1315.996	1087.622	806.359	607.034	377.283	278.537	2.908	1.551	0.873	0.842	0.199
12	Konta	6/1986 to 5/2016	22234.193	19524.590	19481.146	17931.168	16671.197	14728.170	14250.384	13150.210	12975.908	11282.625	7786.582
13	Kopergaon	6/2014 to 5/2016	Sufficient data not available										
14	Kosagumda	11/1996 to 5/2016	1328.272	1253.231	1208.812	1149.675	1027.275	885.016	745.209	702.066	669.538	606.073	319.712
15	Mancherial	6/1986 to 5/2016	21741.361	11272.796	10110.640	8857.289	6377.677	4388.380	3052.499	2409.947	2136.987	1608.790	1026.235
16	Murthahandi	12/1988 to 5/2016	2176.196	1836.688	1797.738	1704.197	1611.137	1410.230	1337.391	1178.623	1016.123	966.306	838.012
17	Nanded	6/2014 to 5/2016	Sufficient data not available										
18	Nowrangpur	6/1986 to 5/2016	3983.487	3116.370	2942.797	2631.857	1997.318	1658.117	1380.698	1046.986	887.833	782.868	689.908
19	Pachegaon	6/1986 to 5/2016	1244.137	894.100	606.855	395.040	317.845	240.406	155.072	77.873	47.197	26.490	17.819
20	Pathagudem	6/1986 to 5/2016	39701.645	31428.936	27873.670	25914.869	24293.152	20733.879	18961.178	18333.162	16832.775	15609.989	12711.632
21	Perur	6/1986 to 5/2016	111689.641	97011.305	81477.438	72553.219	65751.406	64893.977	57063.453	44309.203	42492.762	41321.305	33564.465
22	Polavaram	6/1986 to 5/2016	146840.031	115057.375	98580.617	94728.633	90619.438	83405.781	72801.852	58421.543	57707.754	53395.977	47620.160
23	Potteru (Seasonal)	6/1997 to 11/2015	3081.361	2495.433	2449.729	2251.344	2041.872	1934.940	1845.756	1727.969	1427.417	1380.098	1095.238
24	Purna	6/1986 to 5/2016	4891.184	2561.493	1880.193	1673.989	1297.133	930.664	428.179	317.332	290.255	250.547	177.458
25	Saigaon	6/1986 to 5/2016	2890.523	1793.807	1102.561	880.788	528.833	356.541	192.905	65.122	47.705	30.119	18.449
26	Sangam	6/1996 to 5/2016	447.049	397.799	361.112	345.549	289.164	264.630	249.963	174.325	154.350	148.931	94.843
27	Saradaput	6/1986 to 5/2016	7553.318	6280.788	6015.421	5652.474	5490.324	5080.478	4333.129	4024.161	3803.223	3772.700	3084.769
28	Somanpally (Seasonal)	6/1986 to 11/2015	2665.202	2005.835	1938.690	1774.310	1217.195	991.688	758.967	598.916	420.475	304.438	269.383
29	Sonarpal	12/1991 to 5/2016	1051.350	915.523	807.378	795.686	748.159	637.476	619.070	567.085	515.831	413.693	349.553
30	Tumnar	12/1991 to 5/2016	1931.564	1781.594	1716.620	1614.801	1304.763	1214.306	1085.038	869.759	829.790	746.238	545.158
31	Yelli	6/1986 to 5/2016	12766.605	8216.741	4857.532	4486.917	2910.943	2522.085	1737.911	1385.973	1164.766	821.787	149.367
32	Zari	6/1987 to 5/2016	1147.637	671.806	618.940	479.853	423.701	330.369	191.657	138.657	115.399	64.499	38.624

Source : SE, Godavari Circle, Central Water Commission, Hyderabad, Wainganga Division, C.GO complex, Block-C, 2nd Floor, Seminary Hills Nagpur

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

V **Basin : Krishna** **Unit: M.C.M**

No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ARJUNWAD (SEASONAL)	6/1986 to 11/2015	15069.720	10030.761	8847.951	8047.019	7596.887	5884.149	5255.279	4833.030	4287.412	3538.089	2719.788
2	CHOLACHGUDA (SEASONAL)		1343.325	1064.793	1030.419	1005.776	889.801	757.276	652.321	421.644	361.291	314.332	288.717
3	GOKAK FALLS (SEASONAL)		3117.431	2264.418	2149.026	1946.810	1484.719	1261.192	916.772	863.824	818.288	734.578	524.570
4	SADALGA (SEASONAL)		3902.257	3142.323	2983.264	2806.967	2372.847	2191.840	1968.163	1773.137	1707.229	1588.086	1007.585
5	SAMDOLI (SEASONAL)		4722.510	3568.417	3382.869	3195.988	2791.383	2587.252	2215.240	1996.245	1766.748	1554.206	1402.276
6	TERWAD (SEASONAL)		7068.382	5479.197	5204.441	4994.335	4217.161	3950.846	3421.268	3167.683	3152.000	2961.913	2548.001
7	SARATI	6/1986 to 5/2016	2526.439	1722.618	1669.919	1353.411	1187.209	975.352	771.634	326.134	199.767	144.547	16.252
8	T RAMAPURAM (SEASONAL)		1317.210	1011.280	940.299	885.295	777.266	743.106	553.691	475.415	447.279	397.914	295.282
9	TAKLI		9261.984	7940.820	5807.849	5045.040	3410.276	2204.762	2035.488	1473.300	1019.847	367.961	11.722
10	BAWAPURAM		10166.860	7750.349	6516.079	6068.091	5552.710	5001.107	4464.924	2990.153	2396.301	1899.389	1177.869
11	DAMERACHERLA		1839.619	1690.811	1569.984	1486.742	1024.245	860.017	719.618	615.872	545.553	507.567	138.056
12	HALIA		500.038	385.644	224.256	170.455	158.795	131.346	114.181	67.090	52.878	25.755	19.424
13	HUVINHEDIGI		26360.330	21495.855	20306.053	18563.889	14153.252	12933.303	11153.576	10328.496	9776.526	8352.915	4738.315
14	KARAD		9704.842	6694.474	5613.298	5044.254	3848.272	3668.943	3298.067	2639.785	2504.622	2335.453	2199.284
15	KEESARA		4216.981	3178.110	3016.172	2802.318	2284.322	1864.400	1366.387	978.872	929.781	823.035	542.715
16	KURUNDWAD		18582.766	15176.480	13016.443	12188.915	11267.912	9986.247	8586.493	7959.742	7269.778	5942.298	5262.468
17	MADHIRA		971.023	758.514	731.236	677.472	570.147	488.820	386.601	277.427	247.920	202.774	152.616
18	MANTRALAYAM		11616.108	8396.126	7774.601	7581.790	6589.438	6098.763	5409.451	3813.929	3524.795	2667.384	1746.195
19	NARASINGPUR		10253.889	5777.898	4938.524	4527.412	3430.392	2224.860	1945.387	1156.124	435.559	378.037	312.890
20	PALERU BRIDGE		912.249	673.462	584.337	544.880	446.308	416.204	361.817	243.163	201.898	82.783	28.290
21	VIJAYAWADA		33673.840	28583.258	26381.672	20756.145	15813.800	10810.996	8229.352	5389.342	4033.999	2539.008	402.665
22	WADAKBAL		2120.760	853.615	756.728	566.874	475.265	280.331	201.871	136.681	112.789	67.956	17.724
23	WADENAPALLY		38038.184	35558.512	35382.383	26165.752	21286.121	16186.810	14012.532	9385.075	8511.557	7253.458	2928.620
24	WARUNJI		5688.329	4502.292	3694.697	3374.111	2865.615	2388.015	2155.399	2002.684	1810.994	1703.185	1541.154
25	YADGIR		14178.069	10571.211	9586.245	8270.811	6612.924	4532.199	3783.230	3053.093	2674.015	2495.932	1100.630
26	BYLADAHALLI		579.361	515.114	490.072	395.778	356.229	339.900	292.680	265.693	251.339	233.937	134.413
27	HARALAHALLI		10061.907	8346.675	7831.449	7736.358	7443.601	7136.555	6104.122	5279.761	5056.599	4956.231	3727.829
28	HONNALI		9576.447	7991.134	7816.934	7747.593	7308.674	6887.857	5939.749	5011.978	4940.437	4929.593	4032.092
29	MAROL		3403.233	2611.362	2565.776	2476.194	2101.328	1954.238	1829.103	1355.208	1237.624	1073.387	808.071
30	SHIMOGA		7240.276	6362.550	6252.979	6155.041	5951.525	5629.910	4814.335	4376.527	4176.244	4124.607	3625.795
31	DODDIPADU.	11/2014 to 5/2016	Sufficient data not available										
32	MALKHED	8/1990 to 5/2016	1868.738	1101.919	1084.053	1045.952	919.119	645.451	561.338	354.504	246.669	197.626	130.064
33	PHULGAON (SEASONAL)	6/1992 to 11/2015	2711.569	1951.602	1448.067	1321.100	1170.337	1035.189	956.852	766.646	633.669	610.325	414.455
34	TALIKOT (SEASONAL)	9/1995 to 11/2015	638.754	332.571	295.165	209.328	170.610	167.111	140.495	125.174	117.575	89.240	43.041
35	HOLEHONNUR	6/2004 to 5/2016	2903.588	2668.137	2476.561	2371.227	2258.275	2221.686	1616.937	1459.752	1459.637	1458.141	1064.765
36	HOOVINAHOLE		66.748	52.163	43.135	27.851	7.216	4.348	3.332	1.079	0.000	0.000	0.000
37	KELLODU		292.708	212.304	98.918	68.775	60.299	45.209	26.243	10.812	9.279	4.204	1.193
38	KUPPELUR	7/1990 to 5/2016	834.158	612.661	593.338	476.089	415.229	396.776	304.435	183.356	157.930	112.405	68.559
39	MALKHEDA	6/1986 to 10/2004	229.178	100.358	90.386	85.172	80.951	69.285	25.343	15.399	11.855	10.213	5.572

Source : SE, Godavari Circle, Central Water Commission, Hyderabad, Krishna Basin

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

VI **Basin : Cauvery** **Unit : M.C.M**

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	AKKIHEBBAL AT HEMAVATHI	1/2002 to 5/2016	2062.299	1867.335	1497.775	1462.307	1281.404	1144.096	814.533	510.129	412.142	316.701	204.355
2	ANNAVASAL AT NATTAR	6/1999 to 5/2016	39.845	33.839	29.622	27.179	24.035	19.443	16.667	13.340	10.703	7.356	2.549
3	BENDRAHALLI AT SUVARNAVATHI	8/2005 to 5/2016	87.713	64.301	56.520	52.229	48.822	38.968	31.254	26.971	26.271	23.015	9.488
4	BILIGUNDULU AT CAUVERY	6/1986 to 5/2016	10139.860	8800.972	7773.074	7345.221	6916.751	6348.677	5701.724	5422.165	5271.284	4616.020	3048.909
5	CHUNCHUNKATTE AT CAUVERY	6/2008 to 5/2016	Sufficient data not available										
6	ELUNUTHIMANGALAM AT NOYYAL	8/1998 to 5/2016	272.235	202.684	190.880	180.750	149.710	134.629	30.586	27.459	23.853	14.068	10.473
7	GANDHAVAYAL AT GANDHAYAR	6/2013 to 5/2016	Sufficient data not available										
8	GOPURAJAPURAM AT PURAVIDAIYA	6/1999 to 5/2016	93.467	79.723	74.813	69.434	61.392	52.645	47.970	39.190	29.143	18.786	7.714
9	HOGENAKKAL AT CHINNAR	10/1996 to 5/2016	155.105	91.549	51.529	43.578	37.536	27.615	17.119	5.803	4.659	3.475	1.233
10	K.M.VADI AT LAKHSHMANTHIRTHA	6/1986 to 5/2016	675.193	482.265	450.576	364.164	319.738	293.061	233.079	200.541	161.376	141.829	105.519
11	KODUMUDI AT CAUVERY		11301.510	9553.460	9341.384	8968.967	7831.276	7009.575	6425.981	5801.452	5419.548	4986.771	3210.688
12	KOLLEGAL AT CAUVERY		9497.930	7462.122	7066.180	6855.736	5761.103	5242.170	4698.988	4429.485	4207.884	3980.555	3029.162
13	KUDIGE AT CAUVERY		3890.110	3325.174	3111.629	2918.956	2574.268	2436.264	2346.680	2135.920	2082.471	1993.156	1609.060
14	KUDLUR AT PALAR	3/1999 to 5/2016	98.262	54.739	45.546	37.957	31.333	17.065	13.344	7.948	7.555	7.072	2.535
15	M.H.HALLI AT HEMAVATHI	6/1986 to 5/2016	1841.489	1132.548	1044.730	1007.501	969.986	842.113	773.769	640.259	586.121	578.101	442.290
16	MENANGUDI AT NOOLAR	6/2004 to 5/2016	90.578	78.827	67.997	60.185	54.791	53.314	50.640	40.269	36.028	30.761	21.398
17	MUSIRI AT CAUVERY	6/1986 to 5/2016	12068.151	9649.854	9100.170	8474.690	7588.554	6588.532	5806.131	4881.033	4785.527	4550.829	2479.956
18	MUTHANKERA AT KABINI		3336.192	3019.988	2694.418	2580.210	2523.430	2326.569	2200.439	2004.313	1949.551	1834.935	1484.863
19	NALLAMARANAPATTY AT AMARAV		713.409	439.891	334.295	319.076	253.349	168.172	143.754	52.432	48.168	40.680	31.774
20	NALLATHUR AT NANDALAR	6/2006 to 5/2016	143.179	111.325	101.789	96.329	90.206	84.819	84.004	81.182	67.345	39.141	25.288
21	NELLITHURAI AT BHAVANI	6/1986 to 5/2016	2130.438	1774.633	1710.218	1646.220	1308.311	1203.190	1125.343	1019.650	888.456	791.079	552.345
22	PERALAM AT VANJIYAR		26.340	23.465	21.473	20.758	14.318	11.764	10.822	9.054	8.778	6.651	2.782
23	PORAKUDI AT ARASALAR	6/1999 to 5/2016	156.853	140.621	134.069	123.231	107.474	98.845	79.833	51.826	37.780	27.048	17.741
24	SAKLESHPUR AT HEMAVATHI	4/2002 to 5/2016	1832.303	1441.676	1328.720	1297.460	1232.400	1199.139	957.096	803.786	778.374	662.730	276.117
25	SAVANDAPUR AT BHAVANI	6/1986 to 5/2016	911.459	714.051	653.323	646.709	586.781	558.872	520.333	471.326	450.694	437.327	343.935
26	SEVANUR AT CHITTAR	9/1999 to 5/2016	20.366	10.604	9.734	8.897	7.999	6.965	6.668	5.889	5.236	2.999	0.120
27	T. BEKUPPE AT ARKAVATHI	9/2003 to 5/2016	341.844	309.220	307.265	292.628	256.869	226.492	222.802	188.345	138.151	110.892	34.735
28	T.K.HALLI AT SHIMSA	6/1986 to 5/2016	1225.230	1028.079	950.902	752.478	690.573	648.280	561.969	487.408	452.209	362.686	256.778
29	T.NARASIPUR AT KABINI		3911.047	3029.567	2873.101	2751.321	2489.489	2325.980	2225.407	2152.887	2097.379	1945.306	1526.021
30	THENGUDI AT THIRUMALAIRAJANA	6/1999 to 5/2016	218.840	182.418	171.509	168.994	156.035	151.258	121.872	91.341	66.521	50.274	26.534
31	THENGUMARAHADA AT MOYAR		519.188	388.777	343.198	340.552	317.812	296.719	268.327	244.705	227.880	198.267	154.834
32	THEVUR AT SARABENGA	9/1999 to 5/2016	33.019	18.056	16.820	15.681	11.277	9.951	8.132	7.303	4.832	1.465	0.000
33	THIMMANAHALLI AT YAGACHI	6/2000 to 5/2016	399.264	365.102	315.738	208.369	202.749	175.730	145.646	109.171	87.522	73.528	21.456
34	THOPPUR AT THOPPAIYAR	10/1999 to 5/2016	18.953	4.969	3.490	2.736	1.497	0.201	0.021	0.000	0.000	0.000	0.000
35	URACHIKOTTAI AT CAUVERY	6/1986 to 5/2016	9937.687	8478.598	8010.268	7866.512	6775.414	6363.993	5736.600	5394.701	4818.258	4569.666	2990.267

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

VII Basin : Pennar **Unit: M.C.M**

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALLADUPALLI AT KUNDERU	6/1986 to 5/2016	3178.804	2891.520	2817.418	2103.807	1585.813	1260.927	1172.858	930.381	759.229	730.329	285.787
2	CHENNUR AT PENNAR	7/1989 to 5/2016	4481.328	3421.261	3350.236	3158.041	2545.619	1898.343	1420.418	1184.855	893.173	785.930	549.423
3	KAMALAPURAM AT PAPAGNI	6/1990 to 5/2016	485.439	154.269	132.541	88.263	48.825	26.414	15.853	11.113	6.277	0.993	0.000
4	NAGALAMEDIKE AT PENNAR	6/1986 to 5/2016	40.837	18.964	9.599	5.404	2.442	0.965	0.000	0.000	0.000	0.000	0.000
5	NANDIPALLI AT SAGILERU	6/1990 to 5/2016	276.209	231.202	197.040	167.453	105.083	62.908	36.797	23.814	21.973	18.108	1.534
6	NELLORE AT PENNAR	8/1987 to 5/2016	3820.422	2174.024	1602.099	1181.529	782.213	402.224	172.973	69.853	52.599	36.019	21.197
7	SINGAVARAM AT CHITRAVATHI	6/1986 to 5/2016	307.319	108.624	29.736	24.768	15.837	3.528	0.183	0.000	0.000	0.000	0.000
8	TADIPATTRI AT PENNAR	6/1986 to 5/2016	427.896	211.742	105.484	95.509	80.203	45.513	40.150	2.531	1.493	0.983	0.000

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

VIII Basin : East Flowing Rivers from Mahanadi to Pennar **Unit: M.C.M**

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ANAKAPALLI	08/1990 to 05/2016	1679.469	1390.836	1225.206	1102.605	944.375	807.875	687.767	480.070	391.162	356.604	109.071
2	GUNUPUR	06/1989 to 05/2016	4981.181	3103.011	3010.030	2906.387	2744.183	2667.765	2476.517	2379.836	2301.591	2130.528	1697.354
3	KASHINAGAR	06/1986 to 05/2016	6307.458	5016.567	4295.725	3932.419	3564.901	3104.338	2912.535	2697.325	2554.567	2344.263	1985.892
4	PURUSHOTTAMPUR	06/1989 to 05/2016	4880.807	2891.390	2836.032	2791.909	2741.159	2677.885	2368.988	2106.702	1925.329	1613.081	1070.190
5	SRIKAKULAM	08/1990 to 05/2016	5783.126	4545.544	4218.351	3976.857	3670.119	3158.517	2669.942	2288.679	2097.656	1966.243	1743.759
6	MARELLA	06/2007 to 05/2016	Sufficient data not available										

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

IX Basin : East Flowing Rivers from Pennar to Kanyakumari **Unit: M.C.M**

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	A.P.PURAM AT CHITTAR	6/1986 to 5/2016	71.679	43.082	34.080	30.264	13.843	7.730	3.567	2.533	1.418	0.315	0.029
2	AMBASAMUDRAM AT VAIGAI	1/1999 to 5/2016	161.254	94.277	90.521	87.501	67.659	56.898	49.489	34.885	22.281	18.876	6.029
3	ARCOT AT PALAR	6/1986 to 5/2016	209.589	104.857	65.624	54.174	5.245	0.083	0.000	0.000	0.000	0.000	0.000
4	AVARANKUPPAM AT PALAR		162.286	86.896	54.295	43.007	21.802	14.965	9.096	4.707	3.123	1.264	0.371
5	CHENGALPET AT PALAR		1303.520	417.703	194.307	172.290	95.245	60.503	33.611	16.866	13.701	12.432	6.243
6	GUMMANUR AT PONNAIYAR		474.914	310.834	308.575	290.474	239.629	216.635	200.791	170.567	130.701	82.457	52.485
7	IRRUKKANKUDI AT VAIPPAR	11/1989 to 5/2016	130.684	48.772	43.815	33.401	18.333	16.596	8.795	4.744	2.292	0.000	0.000
8	KUDALAIYATHUR AT VELLAR	11/1989 to 5/2016	913.107	587.859	493.491	468.253	286.852	205.853	114.959	19.957	6.490	4.368	1.837
9	KUMARAPALAYAM AT VARAHANAI	11/2004 to 5/2016	365.703	220.748	127.125	87.406	68.656	22.547	12.835	6.058	1.683	0.000	0.000
10	MAGARAL AT CHEYYAR	6/1986 to 5/2016	489.681	245.403	59.824	52.432	24.589	1.399	0.235	0.000	0.000	0.000	0.000
11	MURAPPANDU AT TAMBRAPARANI		1013.471	854.988	705.278	646.446	496.168	409.778	383.712	345.408	293.270	277.024	230.637
12	NAIDUPETA AT SWARNAMUKHI		913.754	506.545	426.051	315.799	207.116	188.983	94.868	62.198	48.364	37.196	22.536
13	NANDALUR AT CHEYYERU	6/2013 to 5/2016	Sufficient data not available										
14	PARAMAKUDI AT VAIGAI	6/1986 to 5/2016	431.188	179.355	97.815	64.745	30.244	21.759	15.417	9.981	1.528	0.130	0.000
15	SULURPET AT KALINGI	10/1988 to 5/2016	561.193	326.691	292.755	257.688	142.599	108.971	66.977	39.354	25.315	16.727	11.675
16	THENI AT SURULIYAR	6/1986 to 5/2016	880.680	738.157	714.625	680.179	629.577	589.845	576.127	498.940	486.995	410.000	229.141
17	VAZHAVACHANUR AT PONNAIYAR		1021.760	380.437	308.039	272.337	208.049	168.168	144.866	85.255	53.245	42.570	10.947
18	VILLUPURAM AT PONNAIYAR		1002.732	531.397	343.870	209.985	171.414	92.230	48.166	14.418	5.777	2.237	0.000

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

X **Basin: Narmada** **Unit: M.C.M**

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Orsang at Chandawada	06/1986 to 05/2016	2232.70	1755.60	1560.6	1375.50	1058.90	898.90	789.90	448.50	317.6	149.30	0.00
2	Narmad at Garudeswar		35390.00	35068.50	26927.5	25508.80	23122.90	20735.50	12187.70	0.00	0.0	0.00	0.00
3	Goi at Pati		727.20	667.30	600.5	478.70	433.6	284.1	240.2	191.5	189.7	135.10	43.20
4	Uri at Dhulsar		331.10	161.80	161.8	161.00	126	85.90	65.20	37.70	32.3	32.00	5.50
5	Narmada AT Mandleswar		45370.30	34264.00	33444.1	29788.00	24620.60	22418.50	15909.00	0.00	0.0	0.00	0.00
6	Kundi at Kogaon		2058.30	1722.70	1484.4	1324.70	988.50	676.20	563.80	166.80	150.5	0.00	0.00
7	Narmada at Handia		41161.30	29282.70	26618.1	25844.20	21142.30	18991.70	17152.30	13698.40	11984.9	0.00	0.00
8	Ganjal at Chhidgaon		2174.10	1548.60	1510.7	1218.50	930.00	701.80	531.20	345.50	255.2	0.00	0.00
9	Narmada at Hoshangabad		31483.40	23395.90	21396.7	21086.90	17309.10	14694.70	12346.30	0.00	0.0	0.00	0.00
10	Narmada at Sandia		25690.90	21283.90	16620.1	16106.00	14163.20	12734.10	10243.60	8965.20	8018.4	2803.50	0.00
11	Shakkar at Gadarwara		2809.30	2144.87	1587.9	1492.40	1311.60	1006.90	753.50	628.50	477.3	0.00	0.00
12	Narmada at Barmanghat		20172.40	13350.70	12544.5	11099.50	9456.30	8179.00	6329.00	0.00	0.0	0.00	0.00
13	Sher at Belkheri		1222.00	841.40	771.0	703.20	637.30	541.60	451.90	343.60	229.4	0.00	0.00
14	Hiran at Patan		3009.30	2860.70	1918.7	1830.30	1602.40	1469.20	1334.10	762.60	625.6	560.10	0.00
15	Banjar at Bamni		1509.30	1399.10	1399.1	1158.30	745.00	707.20	597.70	549.60	521.8	492.30	373.40
16	Burhner at Mohgaon		3722.10	3080.10	2698.1	2480.50	2216.10	2070.00	1721.20	1312.00	1105.1	255.10	0.00
17	Narmada at Manot		4345.60	3888.20	3793.2	3555.20	2987.00	2506.30	2168.90	1637.50	1315.0	0.00	0.00
18	Narmada at Dindori		1895.20	165.90	1547.0	1388.00	1270.60	1188.40	1119.90	965.70	870.6	779.40	703.60

Source SE(C),Govt. of India, CWC, Office of the Chief Eng., Narmada Basin Oraganistion, Bhopal (MP) Narmada Basin.

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

XI **Basin : Tapi** ***Unit : M.C.M***

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	MOTINAROLI	10/1990 to 5/2016	836.331	653.431	586.401	565.740	425.570	368.925	297.951	224.193	219.541	202.665	118.224
2	PINGALWADA	6/1989 to 5/2016	972.261	708.033	645.822	634.095	549.796	451.604	360.089	319.115	292.927	241.524	135.169
3	GIDHADE		14665.103	10566.721	8367.813	7862.310	6439.781	4979.897	4864.075	4356.251	3567.173	3306.703	2680.822
4	PURNA AT GOPALKHEDA		2335.342	1727.999	1427.596	1317.802	1164.750	840.838	611.846	480.885	400.813	366.624	240.922
5	SARANGKHEDA		16169.725	12165.326	9316.662	8471.827	7530.939	6689.611	5871.059	4230.048	3816.832	3496.718	3154.944
6	TAPI AT BURHANPUR		9709.529	7200.479	6607.725	6337.846	4985.282	4041.147	3665.984	3206.594	3026.230	2688.315	2055.711
8	DEDTALAI		6499.150	4209.995	3700.314	3445.168	2965.233	2643.608	2373.609	2242.769	2141.347	1843.089	1176.345
7	PURNA AT YERLI	6/1986 to 11/2015	3791.364	3274.903	2740.837	2582.731	1823.643	1725.717	1116.191	978.531	832.485	753.201	517.268
9	MORANE	6/1986 to 10/2004	301.012	157.372	149.030	134.350	109.961	78.230	73.849	47.538	40.508	34.839	7.436
10	DAPURI	6/1986 to 1/2005	821.751	750.115	661.036	558.135	449.556	282.095	229.568	151.541	83.981	72.130	49.053
11	LAKHPURI	6/1986 to 5/2005	1294.308	822.941	668.809	526.282	489.341	398.309	287.906	239.319	235.628	203.603	154.804
13	GHALA		12949.832	9996.114	5706.248	4881.665	3253.946	2900.366	2135.746	1773.716	1565.854	1468.211	985.273
12	SAVKHEDA	6/1986 to 11/2004	14631.432	11722.829	7665.115	7439.081	6889.659	6132.358	5266.432	4195.187	4033.974	3292.114	2180.875

Source: Executive Engineer Tapi Division Surat.

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

XII Basin : West Flowing Rivers from Tapi to Tadri **Unit: M.C.M**

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	SANTEGULI AT AGHANASHINI	6/1988 to 5/2016	6141.582	5633.297	5080.903	4813.868	4097.799	3672.799	3468.026	3248.180	3037.870	2735.148	2473.146
2	AMBICA AT GADAT	6/1986 to 5/2016	2254.298	1782.070	1711.149	1644.106	1504.000	1294.174	1201.752	1073.153	941.951	899.805	640.661
3	DURVESH		4343.631	3994.608	3870.577	3731.682	3372.984	3013.848	2566.633	2285.647	2188.083	2018.285	1662.365
4	NANIPALSON		1407.567	1200.110	1051.401	1015.191	919.662	827.346	774.811	661.406	632.411	545.380	441.866
5	OZERKHEDA		1565.480	1293.107	1128.049	1095.612	1040.892	965.958	894.987	800.006	730.086	703.646	592.255
6	PURNA AT MAHUWA		2504.155	1952.659	1705.798	1543.192	1198.390	1051.187	892.090	732.175	606.088	534.236	391.524

Source: Executive Engineer Tapi Division Surat.

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari **Unit: M.C.M**

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ADDOOR AT GURPUR	7/2003 to 5/2016	2703.714	2658.791	2633.903	2595.386	2522.646	2275.987	2148.760	2021.211	1950.005	1826.560	1507.689
2	AMBARAMPALAYAM AT ALIYAR	6/1986 to 5/2016	491.982	412.476	400.254	378.197	355.698	306.039	290.235	277.527	266.290	264.123	250.363
3	ARANGALY AT CHALAKUDY		2689.757	2144.232	2052.526	1958.271	1816.419	1674.686	1629.994	1448.687	1415.611	1395.560	1302.346
4	ASHRAMAM AT PAZHAYAR	9/1999 to 5/2016	179.566	162.430	154.101	148.000	120.343	97.699	80.761	76.695	64.040	51.564	13.475
5	AVERSHE AT SITA	6/2002 to 5/2016	1424.458	1363.598	1346.739	1316.203	1247.866	1185.718	1112.012	1093.940	1084.492	1072.188	875.125
6	AYILAM AT VAMANAPURAM	6/1986 to 5/2016	960.747	853.874	818.668	779.482	722.922	597.338	538.200	511.012	502.058	481.612	419.345
7	BANTWAL AT NETRAVATHI		13596.488	12471.455	12338.573	12127.898	11594.852	10919.900	9848.549	9346.535	9229.784	8836.892	7128.924
8	ERINJIPUZHA AT PAYASWANI		3010.981	2791.565	2659.641	2511.865	2350.674	2287.683	2066.224	1868.752	1834.680	1777.171	1643.930
9	HALADI AT HALADI		2492.513	2345.046	2233.012	2143.374	2103.776	2014.917	1824.804	1712.408	1626.944	1538.862	1465.150
10	KALAMPUR AT KALIYAR		1493.415	1372.114	1331.772	1271.928	1228.031	1105.063	1036.888	952.062	941.336	907.235	843.516
11	KALLOOPPARA AT MANIMALA		2260.645	2123.329	2062.676	2010.044	1944.200	1793.796	1572.559	1463.668	1404.716	1328.529	1233.862
12	KARATHODU AT KADALUNDI		1929.054	1648.932	1547.315	1493.884	1352.156	1184.504	1077.422	1008.172	946.112	865.604	804.467
13	KIDANGOOR AT MEENACHIL		2254.880	2122.760	1997.587	1887.113	1752.741	1719.165	1569.655	1419.987	1392.435	1339.275	1193.798
14	KUMBIDI AT BHARATHAPUZHA		6314.402	5954.523	5617.053	5512.220	4842.496	4172.225	3870.230	3635.735	3379.123	2836.256	2650.657
15	KUNIYIL AT CHALIYAR		6035.533	5453.657	5106.147	4782.437	4416.178	3940.293	3831.231	3401.121	3335.232	3203.496	2195.991
16	KUTTYADY AT KUTTYADI	3/2000 to 5/2016	1710.932	1475.147	1405.520	1387.051	1267.258	1067.492	966.831	911.412	884.664	837.548	591.766
17	KUZHITHURAI AT THAMBRAPARNI	11/2000 to 5/2016	325.315	224.753	177.863	150.559	127.569	91.306	59.988	27.134	9.542	3.618	0.000
18	MALAKKARA AT PAMBA	6/1986 to 5/2016	5066.154	4546.792	4399.520	4286.298	4053.977	3696.948	3593.852	3331.114	3255.646	3125.474	2255.078
19	MANKARA AT BHARATHAPUZHA		1317.780	1016.531	922.649	850.719	695.078	572.151	447.424	436.799	422.193	391.559	292.982
20	NEELESWARAM AT PERIYAR		9384.280	8638.269	8060.161	7592.361	6970.728	6655.937	6299.938	5858.235	5623.225	5568.401	4885.046
21	PATTAZHY AT KALLADA		2051.851	1862.229	1718.264	1644.110	1470.954	1384.037	1200.471	1080.828	992.935	979.100	781.766
22	PERUMANNU AT VALAPATNAM		4838.894	4681.331	4396.583	4138.705	3678.803	3585.528	3257.431	3064.045	3015.339	2920.512	2627.764
23	PUDUR AT KANNADIPUZHA		542.376	387.716	359.279	326.110	295.578	226.667	206.342	202.096	178.007	165.177	119.378
24	PULAMANTHOLE AT PULANTHODU		2297.405	2175.487	2137.990	2069.022	1861.024	1766.849	1627.665	1461.574	1302.395	1256.726	948.314
25	RAMAMANGALAM AT MUVATTUPU		6202.213	5870.599	5656.311	5507.677	5368.013	4962.506	4720.167	4274.478	4180.586	4040.639	3617.845
26	THUMPAMON AT ACHANKOVIL		1598.962	1431.868	1392.208	1314.964	1264.844	1143.354	1000.905	923.650	847.809	809.112	722.690
27	VANDIPERIYAR AT PERIYAR	6/2000 to 5/2016	288.439	238.578	195.896	184.488	161.202	150.534	137.040	128.180	123.396	112.885	89.456
28	YENNEHOLE AT YENNEHOLE	7/1989 to 5/2016	1774.235	1729.610	1702.783	1653.927	1548.139	1476.590	1407.187	1332.906	1311.526	1264.380	1159.496

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

XIV **Basin : Mahi** ***Unit: M. C. M.***

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ANAS AT CHAKALIYA	2/1991 to 5/2016	4458.185	2214.690	1892.355	1674.874	1265.361	892.993	728.166	537.388	443.416	359.160	101.993
2	JAKHAM AT DHARIAWAD	6/1988 to 5/2016	825.964	389.080	349.987	337.395	148.603	116.868	72.020	44.576	37.002	33.078	26.351
3	MACHHUNDRI AT UNA	6/2015 to 2/2016	Sufficient data not available										
4	MAHI AT KHANPUR	6/1986 to 5/2016	11275.283	7902.309	6926.997	6220.271	3570.259	2769.437	2242.520	1087.356	868.639	806.655	553.480
5	MAHI AT MATAJI		2984.531	2300.782	2177.456	1817.693	1484.009	1170.623	1033.782	704.752	589.592	408.118	223.887
6	MAHI AT PADERDIBADI		3895.648	2965.490	2409.413	1808.702	1504.160	1208.272	902.848	669.255	515.729	379.537	314.659
7	SOM AT RANGELI		1921.328	1031.009	854.601	729.395	625.612	529.656	377.623	239.449	206.994	163.837	117.064

Source: SE, Mahi Division, CWC, Gandhi Nagar (2015-16) (Mahi and Sabarmati Basin)

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

XV **Basin : Sabarmati** ***Unit: M. C. M.***

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	SABARMATI AT DEROL BRIDGE	9/1991 to 2/2016	1321.429	693.561	620.668	370.862	224.613	157.306	42.675	25.365	18.694	14.170	6.103
5	WATRAK AT GADVEL (RATANPUR)		833.242	534.434	442.139	339.274	254.916	145.703	112.859	54.029	47.871	43.969	30.812
2	SABARMATI AT KHEROJ	6/1992 to 11/2015	1089.469	636.484	495.208	464.893	296.169	220.023	166.108	132.147	123.075	112.435	42.881
3	SABARMATI AT VOUTHA	8/1999 to 5/2016	5787.239	3980.620	3761.151	3421.882	2421.153	1894.168	1399.158	1055.196	576.576	218.579	77.921
4	WAKAL AT KOTRA(JOTASAN)	6/1995 to 11/2015	362.859	238.640	205.154	187.080	130.305	103.593	91.966	59.198	51.527	46.234	23.686
6	WATRAK AT KHEDA	6/1989 to 5/2016	1414.749	794.639	503.264	354.377	316.241	189.930	135.080	98.439	62.708	34.758	16.600

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore

Table 7 : Annual dependable flow of water by site and river basin for the last 30 Years (1986-2016)

XVI **Basin : WFR of Kutch, Saurashtra Including Luni** ***Unit: M. C. M.***

Sl. No.	Site Name	Period	Dependable flow										
			10%	20%	25%	30%	40%	50%	60%	70%	75%	80%	90%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	BALARAM AT CHITRASANI	6/1990 to 4/2016	121.251	83.145	48.386	37.311	26.578	15.144	8.865	6.101	4.854	4.274	0.335
2	BANAS AT ABU ROAD	6/1989 to 1/2016	447.888	216.500	148.911	73.793	60.269	42.724	27.188	16.190	12.734	9.640	4.110
4	BANAS AT SAROTRY		895.264	433.477	324.531	246.376	131.245	112.151	66.834	39.824	27.032	17.598	5.676
3	BANAS AT KAMALPUR	6/1986 to 12/2015	843.220	250.729	217.152	115.554	94.781	52.795	35.907	11.160	4.103	1.375	0.000
5	BHADAR AT GANOD	6/1986 to 2/2016	1063.585	776.490	649.448	407.610	277.743	153.920	81.442	61.930	41.397	36.411	2.652
6	LUNI AT BALOTRA	6/1990 to 1/2016	653.198	247.310	138.491	71.921	19.515	0.000	0.000	0.000	0.000	0.000	0.000
7	LUNI AT GANDHAV	6/1986 to 5/2016	487.565	226.778	208.737	69.836	9.542	1.006	0.000	0.000	0.000	0.000	0.000
8	MACHHU AT GUNGAN		631.895	402.276	258.873	165.345	86.288	35.574	16.313	13.273	7.794	7.279	1.847
9	SHETRUNJI AT LOWARA		1012.612	501.618	451.093	422.505	206.593	185.486	128.846	114.731	95.305	56.312	22.898
10	SAPAWADA	8/1989 to 5/2016	223.274	155.154	111.741	94.593	67.287	29.431	24.016	11.768	5.227	3.928	0.233
11	LOHARA	6/2015 to 5/2016	2.5	0.7	8.4	4.9	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

I Basin : Mahanadi **Unit : Millimeter**

Sl.No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ANDHIARKHORE	3.285	23.938	33.973	32.057	23.086	9.667	4.034	2.300	0.817	0.703	0.364	0.145
2	BAMNIDHI	9.225	26.279	123.821	30.380	17.334	11.010	5.254	4.069	3.415	4.137	3.308	3.631
3	BARONDA	0.470	61.322	71.579	105.304	9.259	1.976	0.455	0.008	0.000	0.000	0.000	0.000
4	BASANTPUR	5.546	63.297	114.795	70.741	27.897	8.761	1.976	1.356	0.979	0.689	0.658	0.741
5	GHATORA	2.474	33.467	111.418	85.541	25.493	9.183	3.604	2.367	0.909	0.159	0.000	0.000
6	JONDHRA	0.000	66.765	99.064	87.625	47.419	22.611	0.575	0.964	0.765	0.591	0.000	0.000
7	KANTAMAL	25.680	112.680	139.624	175.002	28.288	18.136	11.720	6.012	7.261	4.842	6.462	10.710
8	KESINGA	53.783	120.342	161.700	212.667	42.684	21.578	14.506	7.768	7.213	6.786	10.202	16.605
9	KOTNI	0.000	14.316	56.964	87.524	2.231	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	KURUBHATA	4.098	101.670	156.224	87.579	18.461	11.665	5.608	2.966	1.164	0.709	0.308	0.231
11	MANENDRAGARH	3.600	29.835	76.361	43.435	47.452	4.609	2.425	2.167	1.040	0.489	0.000	0.086
12	PATHARDIH	8.887	129.641	72.077	117.527	32.309	2.919	0.000	0.000	0.000	0.000	0.000	0.000
13	RAJIM	3.133	63.911	74.003	95.481	9.511	1.890	1.019	0.053	0.000	0.000	0.000	0.000
14	RAMPUR	7.388	71.085	129.122	100.972	14.151	4.828	1.378	0.475	0.034	0.000	0.000	0.000
15	SALEBHATA	8.628	194.773	190.355	132.302	9.240	1.958	0.451	0.917	1.003	0.917	0.655	0.418
16	SEORINARAYAN	3.716	67.731	99.282	84.988	22.104	7.023	1.872	0.977	0.658	0.396	0.206	0.260
17	SIMGA	4.097	53.868	37.390	45.813	15.710	2.954	0.470	0.488	0.284	0.026	0.000	0.000
18	SUNDERGARH	5.713	133.773	144.545	80.181	14.890	8.261	4.075	2.810	1.768	1.325	1.343	0.667
19	TIKARAPARA	11.464	68.877	131.662	113.032	26.420	8.836	5.195	5.208	4.171	4.977	5.161	6.193
20	Dindori	9.8	17.1	6.2	6.8	0.6	2.8	0	0	0	0.6	0	0

Source: Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

II Basin : Subernarekha **Unit : Millimeter**

Sl.No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ADITYAPUR	5.616	127.630	137.257	58.364	18.949	6.884	2.639	2.780	1.545	1.257	1.303	2.793
2	GHATSILA	9.122	73.994	119.410	77.897	30.193	18.529	11.560	7.935	6.472	6.051	5.885	6.151
3	GOVINDPUR	60.596	125.001	154.452	121.069	70.928	39.790	38.499	37.069	27.662	27.985	27.404	23.420
4	JAMSHEDPUR	9.354	131.352	162.203	86.305	35.696	14.299	9.010	3.487	3.033	3.125	3.873	4.319
5	MURI	11.465	51.443	56.541	33.052	33.467	3.623	3.069	2.669	1.145	1.247	1.131	2.745

Source: Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

III Basin : Brahmani & Baitarani **Unit : Millimeter**

Sl.No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ALTUMA	5.207	106.146	238.539	137.706	56.127	27.498	5.993	5.002	6.429	6.077	9.391	7.373
2	GOMLAI	6.701	122.185	159.832	98.317	19.497	7.026	3.028	2.308	1.660	1.628	1.256	1.589
3	JARAIKELA	6.837	39.004	43.562	36.184	10.928	6.278	3.348	2.803	1.755	1.664	1.399	2.286
4	JENAPUR	31.431	65.078	130.246	85.429	26.100	7.279	7.561	5.594	3.140	7.110	8.067	15.301
5	PANPOSH	5.927	112.024	148.285	90.104	5.728	3.958	2.655	2.941	2.035	2.037	1.797	2.233
6	TILGA	7.022	122.591	144.921	117.243	21.568	9.798	6.578	5.771	3.808	3.135	2.226	2.183
7	ANANDPUR	5.526	113.606	141.718	47.634	35.249	14.843	6.413	3.281	2.045	1.576	1.143	1.364
8	CHAMPUA	18.675	105.480	179.779	107.676	46.113	18.910	12.464	9.309	6.797	6.013	4.718	5.563

Source: Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

IV Basin : Godavari **Unit : Millimeter**

Sl.No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	AMBABAL AT NARANGI	0.0	21.6	86.1	145.6	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	BETMOGRA AT MANER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	BHADRACHALAM AT GODAVARI	30.1	14.3	43.9	49.8	7.8	3.2	1.0	0.6	0.4	0.3	0.1	0.1
4	CHERRIBEDA AT BARDHA	168.2	76.1	315.8	415.7	22.9	10.2	4.3	1.6	0.4	0.0	0.0	0.0
5	CHINDNAR AT INDRAVATHI	80.1	37.4	82.0	219.6	16.3	4.8	1.9	1.3	0.4	0.6	0.4	1.4
6	DEGLOOR AT LENDI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	DHALEGAON AT GODAVARI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	G.R.BRIDGE AT GODAVARI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	GANDLAPET AT PEDDAVAGU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	JAGDALPUR AT INDRAVATHI	33.3	15.6	41.6	202.1	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	KIWAIBALENGA AT BAWARDHI	50.5	43.2	53.0	134.8	19.2	5.4	0.1	0.0	0.0	0.0	0.0	0.0
12	KONTA AT SABARI	158.7	88.5	131.0	244.2	50.5	30.4	29.0	23.6	27.0	30.8	24.9	15.0
13	KOPERGAON	0.0	36.3	1.9	15.7	0.0	25.7	0.0	0.0	0.0	0.0	0.0	0.0
14	KOSAGUMDA AT BHASKAL	89.4	40.1	96.8	250.5	21.9	6.3	6.8	2.0	0.6	0.8	0.3	0.2
15	MANCHERIAL AT GODAVARI	0.6	2.2	1.9	2.3	1.5	0.6	0.6	0.6	0.4	0.2	0.0	0.0
16	NOWRANGPUR AT INDRAVATHI	14.2	14.2	37.5	127.9	12.3	5.5	4.0	2.9	1.9	1.8	1.3	2.0
17	PACHEGAON AT PRAVARA	0.0	0.0	0.0	0.0	0.0	22.9	0.3	0.0	0.0	0.0	0.0	0.0
18	PATHAGUDEM AT INDRAVATHI	120.4	45.9	107.6	159.9	20.4	5.2	2.5	1.3	0.6	0.4	0.2	0.2
19	PERUR AT GODAVARI	29.8	14.8	49.9	54.3	5.8	1.8	1.0	0.6	0.4	0.3	0.1	0.0
20	POLAVARAM AT GODAVARI	35.0	17.3	41.0	55.1	9.0	3.6	2.5	1.8	1.7	1.9	1.1	1.5
21	POTTERU (SEASONAL) AT POTTER	308.1	152.0	288.9	362.2	85.3	78.0	DISCHARGE NOT OBSERVED					
22	PURNA AT PURNA	1.4	0.0	0.1	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	SAIGAON AT MANJERA/GODAVAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	SANGAM AT MURREDU	56.3	10.7	23.6	54.7	10.5	4.8	2.9	1.3	0.1	0.0	0.0	0.0
25	SARADAPUT AT SABARI	167.1	147.3	233.0	484.9	98.1	44.2	24.0	28.9	36.3	47.0	27.1	34.9
26	SOMANPALLY (SEASONAL) AT MA	8.4	1.7	2.6	7.9	0.4	0.1	DISCHARGE NOT OBSERVED					
27	SONARPAL AT MARKANDI	67.5	30.5	39.3	221.0	15.7	2.6	0.0	0.0	0.0	0.0	0.0	0.0
28	TUMNAR AT DANTEWARA	189.7	45.7	157.4	183.8	24.2	10.0	5.1	2.7	1.4	0.9	0.5	0.7
29	YELLI AT GODAVARI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	ZARI AT DUDHNA	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	LOHARA	2.5	0.7	8.4	4.9	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.9

Source : SE, Godavari Circle, Central Water Commission, Hyderabad, Wainganga Division, C.GO complex, Block-C, 2nd Floor, Seminary Hills Nagpur

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

V Basin : Krishna **Unit: Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ARJUNWAD (SEASONAL)	192.586	116.137	149.728	46.553	39.723	0.000	Seasonal site					
2	BAWAPURAM	3.395	0.265	0.170	305.175	86.388	45.325	1.745	1.220	0.353	0.000	0.000	0.000
3	CHOLACHGUDA (SEASONAL)	26.833	9.863	0.000	38.057	25.379	1.186	Seasonal site					
4	DAMERACHERLA	16.715	5.594	13.838	13.717	0.655	4.666	1.519	0.000	0.000	0.000	0.000	0.000
5	DODDIPADU.	0.000	0.000	0.000	9.898	15.861	15.374	0.000	0.000	0.000	0.000	0.000	0.000
6	GOKAK FALLS (SEASONAL)	43.798	70.804	88.249	51.684	11.138	8.622	Seasonal site					
7	HALIA	3.029	0.212	4.461	10.075	4.630	1.026	1.030	0.000	0.000	0.000	0.124	0.866
8	HUVINHEDIGI	4.155	13.332	29.836	193.129	95.214	38.412	19.910	5.989	8.089	10.823	0.000	21.726
9	KARAD	110.123	100.646	151.907	0.000	0.000	3.288	0.000	13.228	0.000	0.000	0.000	0.000
10	KEESARA	142.574	22.962	41.756	122.424	17.251	0.597	0.543	0.000	0.000	0.000	0.000	0.000
11	KURUNDWAD	406.646	288.799	387.213	154.724	65.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	MADHIRA	32.972	5.854	9.645	19.387	2.630	2.508	0.105	0.000	0.000	0.000	0.000	0.000
13	MALKHED	4.225	5.145	5.988	15.648	2.374	2.553	4.600	4.218	4.334	3.049	2.741	2.677
14	MANTRALAYAM	7.740	0.764	4.628	350.700	123.198	98.829	36.679	28.331	4.600	0.000	0.000	2.944
15	NARASINGPUR	0.000	3.850	0.000	0.000	0.000	0.000	0.000	0.000	21.186	0.000	0.000	0.000
16	PALERU BRIDGE	7.675	2.208	0.436	2.824	0.000	0.000	0.251	0.000	0.000	0.000	0.000	0.000
17	PHULGAON (SEASONAL)	33.898	45.817	16.506	0.000	0.000	0.000	Seasonal site					
18	SADALGA (SEASONAL)	96.591	60.411	81.025	30.962	27.372	0.000	Seasonal site					
19	SAMDOLI (SEASONAL)	109.540	84.311	116.691	32.015	16.137	0.000	Seasonal site					
20	SARATI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	T RAMAPURAM (SEASONAL)	8.101	0.218	4.778	150.167	78.760	30.129	21.045	2.503	0.255	0.000	0.000	1.545
22	TAKLI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	TALIKOT (SEASONAL)	2.740	0.000	2.051	46.395	13.299	0.000	Seasonal site					
24	TERWAD (SEASONAL)	208.845	167.198	211.313	48.465	25.097	0.000	Seasonal site					
25	VIJAYAWADA	91.425	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	WADAKBAL	0.000	0.000	0.000	0.826	0.472	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	WADENAPALLY	22.342	61.293	11.728	22.336	74.629	54.925	22.260	16.722	48.793	24.437	6.183	21.509
28	WARUNJI	0.000	57.719	65.418	0.000	0.000	2.769	0.000	4.596	0.000	0.000	0.000	0.000
29	YADGIR	0.000	1.145	13.926	79.798	55.179	2.298	0.000	0.000	0.000	0.000	0.000	0.000
30	BYLADAHALLI	1.228	1.679	17.003	28.217	26.833	17.083	2.410	0.000	0.000	0.000	0.000	0.000
31	HARALAHALLI	178.841	344.252	266.064	133.860	121.557	82.530	13.702	0.678	0.000	3.898	1.010	10.135
32	HOLEHONNUR	46.360	60.060	70.230	59.752	63.686	48.331	20.302	19.376	24.454	56.979	48.192	35.408
33	HONNALI	263.194	509.559	414.457	189.339	149.776	112.087	42.758	34.336	31.881	46.218	34.045	36.428
34	HOOVINAHOLE	0.000	0.000	0.000	0.000	0.000	1.127	0.629	0.000	0.000	0.000	0.000	0.000
35	KELLODU	0.000	0.000	0.203	3.281	10.673	11.013	0.884	0.005	0.000	0.000	0.000	0.000
36	KUPPELUR	2.088	10.141	9.882	6.995	6.858	0.000	0.000	0.000	0.000	0.000	0.000	0.000
37	MAROL	46.040	56.105	58.113	16.989	22.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
38	SHIMOGA	275.483	469.169	333.365	118.212	81.743	59.216	26.597	8.399	6.263	2.704	1.779	2.362
39	DAHI GAON	2.2	1.8	5.0	5.8	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0

Source :SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

VI Basin : Cauvery **Unit: Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	AKKIHEBBAL	2.262	0.975	31.161	24.274	15.293	17.350	7.200	1.110	1.431	0.484	0.280	0.288
2	BENDRAHALLI	2.315	0.274	1.380	2.585	3.019	5.085	2.077	0.216	0.000	0.000	0.000	0.000
3	BILIGUNDULU	9.198	21.053	20.230	17.100	14.599	21.602	7.196	2.897	1.231	1.396	0.974	1.408
4	CHUNCHUNKATTE	100.550	116.371	99.290	65.711	42.289	22.556	6.914	1.256	0.000	0.000	0.000	0.000
5	ELUNUTHIMANGALAM	9.092	8.367	1.414	0.653	4.700	56.733	46.828	9.023	1.921	0.067	0.000	0.000
6	GANDHAVAYAL	28.616	14.135	9.790	17.508	74.231	320.965	120.164	36.422	13.955	3.257	1.377	0.397
7	HOGENAKKAL	0.000	0.000	0.000	0.001	0.860	11.707	6.641	1.206	0.265	0.000	0.000	0.000
8	K.M.VADI	125.043	26.433	2.427	5.658	8.056	11.603	1.523	0.011	0.000	0.000	0.000	0.000
9	KODUMUDI	1.628	3.361	14.662	24.714	16.885	7.561	6.887	14.048	4.707	1.781	1.178	0.771
10	KOLLEGAL	12.657	30.690	31.721	25.561	17.399	20.275	8.070	2.021	1.184	0.162	0.729	0.488
11	KUDIGE	137.150	446.092	441.923	162.119	93.220	49.091	25.756	14.701	10.126	7.422	8.935	13.720
12	KUDLUR	0.000	0.000	2.887	0.000	2.739	5.865	4.932	0.000	0.000	0.000	0.000	0.000
13	M.H.HALLI	0.716	2.470	55.428	43.914	14.938	8.781	6.771	6.748	7.089	1.719	0.000	0.000
14	MUSIRI	0.835	0.675	10.115	16.440	12.775	6.037	6.835	10.340	3.495	0.683	0.299	0.335
15	MUTHANKERA	406.084	344.228	213.975	140.948	123.614	77.373	36.296	21.507	14.452	7.995	4.373	13.393
16	NALLAMARANAPATTY	0.000	0.757	0.000	0.673	0.301	0.801	35.961	0.739	0.203	0.000	0.000	0.000
17	NELLITHURAI	214.736	121.600	96.131	108.547	54.954	45.378	0.787	31.725	0.000	36.116	81.850	29.414
18	SAKLESHPUR	336.766	246.401	262.270	137.768	97.523	96.595	41.462	24.659	10.461	1.384	2.378	3.879
19	SAVANDAPUR	2.688	8.930	10.084	8.932	9.404	6.284	4.528	6.466	7.258	7.014	7.773	2.381
20	T. BEKUPPE	7.088	5.825	9.611	9.627	6.458	13.631	7.230	4.802	3.329	2.692	2.704	7.824
21	T.K.HALLI	3.428	0.000	4.482	6.325	13.485	21.639	2.721	0.340	0.000	0.000	0.000	0.000
22	T.NARASIPUR	23.700	48.282	39.119	31.730	22.670	25.749	13.064	4.997	3.678	2.371	0.914	0.441
23	THENGUMARAHADA	24.037	14.741	10.855	15.975	17.310	28.582	18.917	11.329	11.122	16.803	19.162	10.471
24	THEVUR	0.000	0.000	0.000	0.000	2.000	2.422	2.270	1.233	0.049	0.000	0.000	0.000
25	THIMMANAHALLI	12.284	8.863	15.622	19.106	15.262	18.736	5.153	2.900	1.684	2.217	1.106	1.970
26	THOPPUR	0.000	0.000	0.000	0.000	0.000	0.000	9.089	0.212	0.000	0.000	0.000	1.170
27	URACHIKOTTAI	2.655	4.774	21.651	29.316	18.603	1.846	5.403	17.199	4.787	0.220	0.815	0.479

Source : SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore.

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

VII Basin : Pennar **Unit: Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ALLADUPALLI	0.389	0.396	0.973	15.162	11.372	1.602	1.199	0.028	0.000	0.153	0.557	0.000
2	CHENNUR	0.057	0.000	0.665	3.932	3.634	3.985	0.624	0.028	0.000	0.000	0.121	0.000
3	KAMALAPURAM	0.000	0.000	0.086	0.529	0.622	6.358	1.735	0.000	0.000	0.000	0.000	0.000
4	NAGALAMEDIKE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	NANDIPALLI	0.000	0.000	0.502	0.000	0.000	6.389	0.149	0.000	0.000	0.000	0.000	0.000
6	NELLORE	0.014	0.011	0.059	0.009	0.006	19.887	12.142	0.289	0.252	0.316	0.151	0.000
7	SINGAVARAM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	TADIPATTRI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000

Source : SE (Coord.), Cauvery & Southern Rivers Organisation, CWC,

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

VIII Basin : East Flowing Rivers from Mahanadi to Pennar **Unit: Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ANAKAPALLI	8.703	5.620	27.091	86.575	72.582	18.063	6.706	3.337	1.216	1.211	0.557	0.549
2	GUNUPUR	10.852	43.811	11.882	142.940	65.018	15.341	6.692	8.896	2.675	1.651	2.428	2.647
3	KASHINAGAR	14.867	46.394	80.494	160.965	72.311	24.087	10.852	7.067	3.370	2.721	2.903	3.408
4	PURUSHOTTAMPUR	13.271	21.688	51.194	151.989	54.504	8.830	3.714	2.371	0.739	0.773	0.638	0.994
5	SRIKAKULAM	9.343	18.553	62.189	89.529	64.177	14.545	7.089	4.317	1.802	1.651	2.878	2.961
6	MARELLA	0.338	0.145	0.588	0.275	0.247	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Source: Mahanadi & Eastern Rivers Organisation, CWC, Bhubaneswar

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

IX Basin : East Flowing Rivers from Pennar to Kanyakumari **Unit: Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	A.P.PURAM	0.152	0.140	0.047	0.000	0.000	25.396	12.659	1.339	0.191	0.162	0.150	0.185
2	AMBASAMUDRAM	0.000	0.000	0.000	0.000	1.558	37.035	59.374	3.832	0.000	0.000	0.000	0.000
3	ARCOT	0.000	0.000	0.000	0.000	0.000	7.432	8.656	0.409	0.003	0.000	0.000	0.000
4	AVARANKUPPAM	0.000	0.000	0.000	0.000	0.000	1.467	0.541	0.009	0.000	0.000	0.000	0.000
5	CHENGALPET	0.000	0.000	0.000	0.000	0.000	44.931	73.766	1.067	0.068	0.000	0.000	0.010
6	GUMMANUR	8.690	4.351	7.851	12.238	13.891	27.977	9.046	5.572	3.670	6.081	2.796	3.928
7	IRRUKKANKUDI	0.000	0.000	0.000	0.000	0.000	0.000	9.005	0.179	0.134	0.112	0.111	0.118
8	KUDALAIYATHUR	0.000	0.000	0.000	0.000	0.000	18.507	47.283	0.000	0.000	0.000	0.000	0.000
9	KUMARAPALAYAM	0.000	0.000	0.000	0.000	0.000	37.437	133.515	0.000	0.000	0.000	0.000	0.000
10	MAGARAL	0.000	0.000	0.000	0.000	0.000	81.931	193.720	0.243	0.000	0.000	0.000	0.000
11	MURAPPANDU	4.921	6.875	6.996	5.273	6.249	37.534	118.371	14.048	8.562	11.031	5.008	6.961
12	NAIDUPETA	0.000	0.000	0.000	0.000	0.000	237.118	80.610	3.381	1.166	0.000	0.000	0.000
13	PARAMAKUDI	0.000	0.000	0.000	0.000	0.000	0.000	8.113	2.365	0.000	0.000	0.000	0.000
14	SULURPET	0.000	0.000	0.000	0.000	0.000	63.330	29.535	0.000	0.000	0.000	0.000	0.000
15	THENI	11.513	56.819	42.575	44.221	38.142	84.161	151.292	70.638	39.093	22.188	3.679	7.023
16	VAZHAVACHANUR	0.068	0.000	0.013	0.021	0.030	5.246	13.941	1.597	1.737	1.754	0.138	0.736
17	VILLUPURAM	0.000	0.000	0.000	0.000	0.000	7.817	36.043	0.000	0.000	0.000	0.000	0.000

Source : SE (Coord.), Cauvery & Southern Rivers Organisation, CWC, Bangalore

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

X Basin : Narmada **Unit : Millimeter**

Sl.No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	NARMADA AT DINDORI	856.61	3046.24	5058.370	3840.73	935.96	423.15	269.79	265.730	188.47	126.16	74.66	55.77
2	NARMADA AT MANOT	883.47	4856.21	7601.62	5005.77	1226.29	464.63	284.96	277.04	180.4	114.61	59.29	25.8
3	BURHNER AT MOHGAON	710.71	4274.48	6588.88	4403.2	1138.16	348.38	267.36	176.88	107.98	77.77	25.54	10.11
4	BANJAR AT BAMNI	309.340	3573.34	6870.21	4398.51	1585.6	682.36	301.56	124.71	66.28	27.69	5.96	0.000
5	HIRAN AT PATAN	344.39	2277.73	4941.24	3620.540	1061.19	363.04	199.71	157.59	128.240	96.62	56.74	30.8
6	SHER AT BELKHEDI	464.05	3783.16	5273.64	3708.46	598.040	197.97	159.38	67.34	56.13	55.92	31.51	23.17
7	NARMADA AT BARMANGHAT	440.71	2156.14	4031.27	3115.64	973.9	626.480	567.56	428.62	485.9	428.23	414.68	331.7
8	SHAKKAR AT GADARWADA	475.13	4069.26	7779.9	5714.900	1026.02	302.01	20057	117.09	98.57	72.200	49.74	30.88
9	NARMADA AT SANDIA	442.4	2302.66	4275.62	3271.81	972.66	589.31	535.79	408.02	416.93	387.48	368.14	340.18
10	NARMADA AT HOSHANGABAD	421.23	2503.62	4677.37	3302.41	920.18	512.38	480.8	382.72	395.68	350.520	325.23	279.63
11	GANJAL AT CHHIDGAON	507.42	4915.31	7228.92	4756.12	1138.45	303.54	179.64	138.53	104.42	96.500	71.890	35.54
12	NARMADA AT HANDIA	380.26	2580.2	4613.230	3049.98	847.28	458.28	451.62	425.49	370.51	318.010	272.620	218.7
13	KUNDI AT KOGAON	359.220	1282.090	2855.88	3459.77	745.07	121.29	35.29	9.29	25.77	3.27	1.610	1.670
14	NARMADA AT MANDLESHWAR	481.880	2094.93	3979.99	3176.06	925.28	578.18	535.32	499.1	456.35	444.13	416.460	371.53
15	URI AT DHULSAR	39.520	341.52	999.04	1244.570	137.2	7.14	1.53	0.000	0.000	0.000	0.000	0.000
16	GOI AT PATI	123.580	318.34	858.22	1118.57	272.53	84.57	32.03	13.960	8.690	7.990	6.750	7.090
17	NARMADA AT GARUDESHAWAR	239.26	1318.88	3026.25	2550.79	710.35	264.380	229.32	204.54	160.51	132.3	106.71	111.750
18	ORSANG AT CHANDWADA	378.090	1952.46	3786.42	3186.12	326.76	48.29	20.84	12.04	7.270	7.2	5.130	5.550
19	NARMADA AT BIJORA	111.10	63.73	422.70	450.80	171.20	147.90	133.60	116.10	138.60	173.20	191.10	190.30
20	Rajpipla	4.5	8.9	0.5	3.3	0	0	0	0	0	0	0	0

Source : SE(C),Govt. of India, CWC, Office of the Chief Eng., (Narmada Basin) Oraganistion, Bhopal (MP).

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

XI Basin : Tapi **Unit : Millimeter**

Sl.No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	GIDHADE	5.4	4.4	3.4	8.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
2	GOPALKHEDA	5.4	1.1	10.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
3	YERLI	0.9	1.2	8.1	7.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
4	SARANGKHEDA	4.2	5.2	2.3	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
5	BURHANPUR	3.4	5.5	14.0	4.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
6	DEDTALAI	2.9	8.5	10.4	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4
7	GADAT	9.6	14.5	1.6	11.5	0	0	0	0	0	0	0	0
8	DURVESH	28.8	24.3	8.7	9.9	1.7	0.1	0	0	0	0.1	0	0
9	MOTINAROLI	10.7	18.5	1.9	10.9	0	0	0	0	0	0.3	0	0
10	NANIPALSAN	13.9	15.2	6.3	8.2	0.7	1	0	0	0	0	0	0
11	OZERKHEDA	13.2	15.6	6	7.2	0.6	1.1	0	0	0	0	0	0
12	PINGALWADA	4.2	6.2	2.5	2.4	0	0	0	0	0	0	0	0
13	MAHUWA	6.1	12.7	1.4	7.5	0	0	0	0	0	0	0	0
14	MORANE	2.6	0.7	3.3	7.2	0.3	0.0	0.0	0.0	0.0	0.7	0.0	1.1
15	LAKHPURI	6.8	1.9	7.6	3.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3
16	SAVKHEDA	6.0	2.7	3.5	3.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2
17	GHALA	0.7	8.8	0.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Chikhaldara	14.6	11.3	23.3	5.7	0.3	0.0	0.0	0.2	0.9	0.9	0.0	1.3
19	Bharuch	6.6	5.8	1.3	4.5	0	0	0	0	0	0	0	0
20	Hathnur Dam	3.1	0.8	8.3	3.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
21	Bhusawal	10.0	1.1	5.0	6.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	Girna Dam	7.0	1.7	3.3	4.5	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.4
23	Ukai Dam	5.9	14.0	0.9	7.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
24	Surat (Seasonal)	17.4	5.0	1.8	13.4	0.0	NA	NA	NA	NA	NA	NA	NA
25	Harshul	11.5	15.9	5.2	5.3	1.8	1.4	0	0	0	0.5	0	0.7
26	Teska (Seasonal)	9.1	8.9	13.1	3.9	0.5	0.0	0.0	0.5	0.3	1.6	0.0	0.4

Source : EE, Tapi Division, CWC.

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

XII Basin : West Flowing Rivers from Tapi to Tadri **Unit : Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	SANTEGULI	201.668	411.047	417.123	236.619	100.200	47.837	20.710	12.913	7.816	5.681	2.282	0.661
2	Madhuban Dam	13.2	21	9.7	9.6	1	0.6	0	0	0	0	0	0
3	Silvassa	12.1	23.1	10.2	11	0.2	0.7	0	0	0	0	0	0
4	Vapi	11.4	20.3	7.4	9.8	0	0	0	0	0	0	0	0
5	Solachar	11.3	18.6	8.3	8.1	0.3	0.5	0	0	0	0	0	0
6	Daman	12.7	12.7	7.9	11.1	0	0	0	0	0	0	0	0
7	ANJANARI	244.379	683.500	733.821	447.599	104.344	2.573	0.000	0.000	0.000	0.000	0.000	0.000
8	BADLAPUR	149.525	1008.598	795.897	574.137	108.224	55.944	33.836	27.514	29.009	24.572	24.950	19.259
9	BELNE BRIDGE	162.595	685.842	757.037	323.955	121.451	1.869	0.000	0.000	0.000	0.000	0.000	0.000
10	COOLEM	87.248	758.172	822.003	412.221	113.769	50.006	26.428	8.106	2.480	0.000	0.000	0.000
11	GANJIM	393.264	1199.135	1173.888	620.853	196.005	79.392	429.497	761.863	3.294	6.927	1.356	0.516
12	MANGAON(Seasonal)	245.579	863.547	700.630	538.568	112.478	0.186						
13	NAGOTHANE	311.240	1450.387	820.090	1134.871	1158.910	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	PEN	152.732	414.924	405.828	317.205	52.586	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore.

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari **Unit : Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ADDOOR	344.537	919.944	724.787	161.256	147.285	49.572	0.000	0.000	0.000	0.000	0.000	0.000
2	AMBARAMPALAYAM	18.572	15.538	22.276	27.585	18.211	25.646	75.724	44.238	29.368	17.827	11.763	21.937
3	ARANGALY	188.344	256.620	174.346	148.412	140.304	102.052	67.511	10.312	9.546	7.580	8.332	11.393
4	ASHRAMAM	83.684	9.952	0.000	29.109	231.086	213.536	0.000	0.000	0.000	2.366	0.000	0.000
5	AVERSHE	234.426	1178.809	1074.991	483.356	227.735	163.040	58.898	20.162	5.010	0.000	0.000	0.000
6	AYILAM	120.024	88.596	37.826	135.286	202.298	202.786	95.086	2.457	0.000	0.000	0.000	53.992
7	BANTWAL	324.818	692.085	597.406	212.331	178.673	129.965	44.664	8.811	0.000	7.175	24.380	0.155
8	ERINJIPUZHA	193.936	667.480	517.869	147.872	167.197	86.016	44.295	14.846	4.559	0.404	0.000	0.000
9	HALADI	233.945	675.601	480.565	263.566	200.062	92.102	46.266	68.976	101.473	242.558	138.466	149.645
10	KALAMPUR	360.185	557.098	367.358	277.682	290.765	266.616	190.156	8.983	0.000	0.000	0.000	28.239
11	KALLOOPPARA	362.476	278.668	243.900	223.684	412.976	251.526	124.052	12.359	0.000	0.000	0.000	163.794
12	KARATHODU	255.956	290.990	200.723	137.245	121.368	71.122	9.564	0.000	0.000	0.000	0.000	0.000
13	KIDANGOOR	366.269	328.800	247.984	245.231	302.344	233.246	134.330	9.367	0.048	0.000	0.000	71.318
14	KUMBIDI	110.493	116.890	81.904	40.234	63.308	50.209	21.700	6.006	1.664	0.143	0.372	1.907
15	KUNIYIL	411.946	318.478	175.465	201.064	140.751	107.462	0.000	0.000	0.000	0.000	0.000	0.000
16	KUTTYADY	959.272	1124.144	685.778	408.728	386.409	126.266	120.518	27.104	85.882	35.865	21.755	35.757
17	KUZHITHURAI	83.408	38.797	19.666	32.222	82.775	121.840	68.781	17.613	13.376	1.658	0.000	25.340
18	MALAKKARA	251.368	268.772	221.156	180.111	297.727	217.163	141.033	15.861	0.000	10.978	20.416	80.595
19	MANKARA	45.350	22.988	21.972	9.139	6.717	19.154	21.657	4.973	1.131	1.423	1.729	2.269
20	NEELESWARAM	242.253	267.985	168.173	136.703	131.533	107.857	77.935	11.622	9.196	3.720	15.686	18.381
21	PATTAZHY	114.693	95.250	79.793	47.245	106.202	127.548	109.954	19.883	13.006	17.992	15.670	135.023
22	PERUMANNU	589.059	675.496	458.181	250.898	209.023	75.666	23.547	13.472	5.657	1.406	1.223	1.361
23	PUDUR	35.693	21.746	24.236	10.672	7.205	19.947	30.668	4.553	1.174	0.000	0.000	1.331
24	PULAMANTHOLE	232.000	224.644	138.807	98.523	113.792	120.537	39.982	10.183	5.371	2.625	2.083	9.149
26	THUMPAMON	109.312	110.096	92.451	105.541	212.059	240.251	65.443	4.870	0.000	0.564	1.079	56.933
27	VANDIPERIYAR	40.148	27.142	20.285	17.747	26.435	17.017	30.307	3.959	1.105	0.029	0.000	0.459
28	YENNEHOLE	489.732	1523.164	1044.400	285.674	197.121	150.251	63.338	19.444	3.586	0.000	0.000	0.000

Source : SE (Coord.), Cauvery & Southern Rivrs Organisation, CWC, Bangalore.

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

XIV Basin : Mahi **Unit: Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ANAS AT CHAKALIYA	0.668	129.445	46.339	6.976	3.439	1.31	0.995	0.904	0.521	0.403	0.175	0.086
2	JAKHAM AT DHARIAWAD	0.855	59.278	151.965	6.782	2.957	2.666	3.054	3.28	2.869	2.102	0.958	0.869
3	MAHI AT KHANPUR	2.583	32.376	34.583	2.689	1.705	1.385	1.38	1.365	1.182	1.278	1.157	1.092
4	MAHI AT MATAJI	1.418	237.307	159.102	6.257	0.462	0	0	0	0	0	0	0
5	MAHI AT PADERDIBADI	0.797	31.631	50.075	6.982	1.871	1.11	1.853	2.745	2.027	2.104	1.151	0.856
6	SOM AT RANGELI	0.914	15.397	39.361	8.911	2.694	2.232	2.322	2.724	2.78	2.683	0.426	0
7	Bodeli	5.9	10.3	0.8	3.6	0	0	0	0	0	0	0	0

Source: SE, Mahi Division, CWC, Gandhi Nagar.

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

XV Basin : Sabarmati **Unit: Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	SABARMATI AT DEROL BRIDGE	3.092	50.273	27.343	2.866	0.292	0.103	0.066	0.42	0	0	0	0
2	SABARMATI AT KHEROJ	22.966	258.31	41.955	4.83	1.413	0.169	0	0	0	0	0	0
3	SABARMATI AT VOUTHA	4.019	30.815	41.85	8.546	5.49	3.645	3.104	3.256	2.446	1.894	1.79	2.341
4	WAKAL AT KOTRA(JOTASAN)	23.064	99.879	52.737	13.874	3.907	0	0	0	0	0	0	0
5	WATRAK AT GADVEL (RATANPUR	25.948	27.521	13.28	4.134	1.797	0.936	0.366	0.009	0	0	0	0
6	WATRAK AT KHEDA	0.176	7.239	6.088	0.8	0.132	0.403	0	0	0	0	0	0

Source: SE, Mahi Division, CWC, Gandhi Nagar.

Table 8 : Monthly average flow per unit drainage area by site and river basin during 2015-16

XVI Basin : WFR of Kutch, Saurashtra Including Luni **Unit: Millimeter**

Sl. No.	Site Name	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	BALARAM AT CHITRASANI	0	282.253	15.729	13.503	2.118	0	0	0	0	0	0	0
2	BANAS AT ABU ROAD	2.8385	0	19.549	4.076	0.693	0	0	0	0	0	0	0
3	BANAS AT KAMALPUR	0	581.245	27.836	9.242	0.975	0	0	0	0	0	0	0
4	BANAS AT SAROTRY	58.261	102.98	45.309	8.469	1.613	0	0	0	0	0	0	0
5	BHADAR AT GANOD	60.743	0	0	0	0	0	0	0	0	0	0	0
6	LUNI AT BALOTRA	0	0	2.688	0	0	0	0	0	0	0	0	0
7	LUNI AT GANDHAV	0	4.105	3.683	0	0	0	0	0	0	0	0	0
8	MACHHU AT GUNGAN	0	19.086	0.593	0	0	0	0	0	0	0	0	0
9	RUPEN AT SAPAWADA	0	66.45	5.46	0	0	0	0	0	0	0	0	0
10	SHETRUNJI AT LOWARA	97.478	8.902	1.709	38.129	0.597	0.146	0	0	0	0	0	0
11	MACHHUNDRI AT UNA	501.726	1.234	1.039	7.988	2.496	0	0	0	0	0	0	0

Source: SE, Mahi Division, CWC, Gandhi Nagar.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

I Basin: Mahanadi **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Baronda			Rajim			Seorinarayan			Basantpur		
1	2006-2007	0.431	0.000	0.431	1.569	0.000	1.569				4.446	0.005	4.451
2	2007-2008	1.214	0.000	1.214	1.317	0.000	1.317				6.651	0.002	6.653
3	2008-2009	0.454	0.000	0.454	0.659	0.000	0.659				2.093	0.001	2.094
4	2009-2010	0.130	0.000	0.130	0.270	0.000	0.270				4.165	0.001	4.166
5	2010-2011	0.665	0.000	0.665	0.855	0.000	0.855				4.096	0.002	4.098
6	2011-2012	0.008	0.000	0.008	0.002	0.000	0.002				4.394	0.015	4.409
7	2012-2013	0.060	0.000	0.060	0.120	0.000	0.120				3.719	0.007	3.726
8	2013-2014	0.206	0.000	0.206	0.307	0.000	0.307	6.165	0.000	6.165	4.830	0.008	4.838
9	2014-2015	0.089	0.000	0.089	0.307	0.000	0.307	15.491	0.000	15.491	7.246	0.002	7.248
10	2015-2016	0.029	0.000	0.029	0.040	0.000	0.040	0.531	0.000	0.531	1.342	0.001	1.343
	Site Name	Simga			Andhiarkhore			Ghatora			Jondhra		
1	2006-2007	1.335	0.000	1.335	0.528	0.000	0.528	0.164	0.000	0.164	5.875	0.000	5.875
2	2007-2008	1.523	0.000	1.523	0.088	0.000	0.088	0.039	0.000	0.039	4.144	0.000	4.144
3	2008-2009	0.077	0.000	0.077	0.131	0.000	0.131	0.062	0.000	0.062	4.596	0.000	4.596
4	2009-2010	0.333	0.000	0.333	0.024	0.000	0.024	0.048	0.000	0.048	2.940	0.002	2.942
5	2010-2011	0.536	0.000	0.536	0.021	0.000	0.021	0.041	0.000	0.041	1.733	0.000	1.733
6	2011-2012	0.003	0.000	0.003	0.772	0.000	0.772	1.129	0.000	1.129	4.726	0.000	4.726
7	2012-2013	0.992	0.000	0.992	0.148	0.000	0.148	0.393	0.000	0.393	4.353	0.000	4.353
8	2013-2014	1.783	0.000	1.783	0.169	0.000	0.169	0.165	0.000	0.166	4.538	0.000	4.538
9	2014-2015	1.587	0.000	1.587	0.218	0.000	0.218	0.274	0.000	0.274	10.842	0.000	10.842
10	2015-2016	0.287	0.000	0.287	0.015	0.000	0.015	0.056	0.000	0.056	1.064	0.000	1.064

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Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

I Basin: Mahanadi **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Rampur			Manendragarh			Bamnidhi			Kurubhata		
1	2006-2007	0.338	0.000	0.338	0.022	0.000	0.022	0.205	0.004	0.209	1.234	0.000	1.234
2	2007-2008	0.750	0.000	0.750	0.014	0.000	0.014	0.164	0.004	0.168	1.142	0.000	1.142
3	2008-2009	0.844	0.000	0.844	0.040	0.000	0.040	0.094	0.001	0.095	1.326	0.000	1.326
4	2009-2010	5.227	0.000	5.227	0.026	0.000	0.026	0.100	0.001	0.101	0.197	0.000	0.197
5	2010-2011	0.211	0.000	0.211	0.064	0.000	0.064	0.153	0.000	0.153	0.000	0.198	0.198
6	2011-2012	0.030	0.000	0.030	0.029	0.000	0.029	0.943	0.000	0.943	3.254	0.000	3.254
7	2012-2013	0.043	0.000	0.043	0.018	0.000	0.018	0.320	0.001	0.321	0.464	0.000	0.464
8	2013-2014	0.108	0.000	0.108	0.010	0.000	0.010	0.114	0.001	0.116	0.854	0.002	0.856
9	2014-2015	0.119	0.000	0.119	0.005	0.000	0.005	0.187	0.001	0.188	1.782	0.000	1.782
10	2015-2016	0.051	0.000	0.051	0.002	0.000	0.002	0.045	0.000	0.045	1.717	0.000	1.717
	Site Name	Sundargarh			Salebhata			Kesinga			Kantamal		
1	2006-2007	1.112	0.000	1.112	0.853	0.000	0.853	N.A.	N.A.	N.A.	14.586	0.005	14.591
2	2007-2008	1.861	0.000	1.861	0.210	0.000	0.210	9.150	0.062	9.212	6.186	0.021	6.207
3	2008-2009	2.397	0.000	2.397	0.747	0.000	0.747	3.435	0.004	3.439	9.084	0.000	9.084
4	2009-2010	2.983	0.000	2.983	0.066	0.000	0.066	14.770	0.000	14.770	0.000	0.000	0.000
5	2010-2011	0.000	1.078	1.078	1.031	0.000	1.031	1.741	0.018	1.759	1.616	0.007	1.623
6	2011-2012	3.248	0.001	3.249	0.275	0.000	0.275	0.814	0.002	0.816	5.578	0.000	5.578
7	2012-2013	1.370	0.000	1.370	0.366	0.000	0.366	1.089	0.013	1.102	9.594	0.016	9.610
8	2013-2014	0.893	0.003	0.896	0.130	0.000	0.130	1.786	0.079	1.865	22.634	0.007	22.642
9	2014-2015	1.450	0.000	1.450	0.399	0.000	0.399	18.344	0.008	18.352	9.013	0.022	9.035
10	2015-2016	1.696	0.001	1.697	0.044	0.000	0.044	4.550	0.004	4.553	1.099	0.009	1.108
	Site Name	Tikarapara			Kotni								
1	2006-2007	15.983	0.128	16.111									
2	2007-2008	9.500	0.240	9.741									
3	2008-2009	8.364	0.364	8.728									
4	2009-2010	0.023	0.021	0.044									
5	2010-2011	5.711	0.060	5.772									
6	2011-2012	5.818	0.052	5.870									
7	2012-2013	7.469	0.013	7.482									
8	2013-2014	7.526	0.049	7.576									
9	2014-2015	8.757	0.022	8.779	2.580	0.000	2.580						
10	2015-2016	2.957	0.015	2.972	0.313	0.000	0.313						

Source: Suspended Sediment Year Book (2006 to 2016) Mahanadi Basin.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

II Basin : Subernarekha & Burhabalang — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Baitarani at Champua			Baitarani at Anandpur			Kharkai at Adityapur			Subranrekha at Jamshedpur		
1	2006-2007	0.557	0.002	0.559	2.123	0.007	2.130	2.151	0.002	2.153	5.800	0.038	5.838
2	2007-2008	0.925	0.004	0.929	4.487	0.034	4.521	1.528	0.002	1.530	2.652	0.011	2.663
3	2008-2009	0.537	0.002	0.539	2.387	0.004	2.391	12.031	0.001	12.032	2.803	0.028	2.831
4	2009-2010	0.207	0.001	0.208	0.787	0.004	0.791	1.045	0.001	1.046	1.153	0.058	1.211
5	2010-2011	3.412	0.005	3.417	0.192	0.005	0.197	0.013	0.001	0.014	0.058	0.005	0.063
6	2011-2012	0.821	0.005	0.826	0.192	0.005	0.197	0.013	0.001	0.014	0.058	0.005	0.063
7	2012-2013	0.203	0.000	0.203	0.315	0.001	0.316	0.034	0.001	0.035	0.796	0.023	0.819
8	2013-2014	0.444	0.001	0.445	1.579	0.004	1.584	0.809	0.013	0.823	2.376	0.016	2.392
9	2014-2015	0.480	0.000	0.481	1.636	0.003	1.639	0.773	0.007	0.780	1.243	0.008	1.250
10	2015-2016	0.230	0.001	0.230	11.628	0.001	11.629	0.369	0.007	0.376	0.948	0.004	0.951

	Site Name	Subranrekha at Ghatsila			Burhabalang at Govindpur		
1	2006-2007	6.156	0.091	6.247	1.937	0.007	1.944
2	2007-2008	11.146	0.026	11.172	2.174	0.020	2.194
3	2008-2009	0.201	0.001	0.202	1.710	0.005	1.715
4	2009-2010	0.852	0.000	0.852	1.393	0.006	1.399
5	2010-2011	0.048	0.017	0.065	0.426	0.000	0.426
6	2011-2012	0.048	0.017	0.065	0.016	0.002	0.018
7	2012-2013	0.852	0.042	0.894	0.253	0.001	0.254
8	2013-2014	2.326	0.027	2.353	0.884	0.018	0.902
9	2014-2015	0.531	0.005	0.537	0.393	0.008	0.402
10	2015-2016	0.178	0.005	0.183	0.014	0.003	0.017

Source: Suspended Sediment Year Book (2006 to 2016) Subernarekha, Burhabalang & Baitarni.

III Basin: Brahmani & Baitarani — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Sankh at Tilga			Brahmani at Jenapur			Brahamani at Panposh			Brahmani at Gomlai		
1	2006-2007	1.203	0.001	1.204	4.728	0.053	4.781	8.494	0.014	8.508	7.288	0.006	7.294
2	2007-2008	1.301	0.000	1.301	7.671	0.019	7.690	15.179	0.019	15.198	13.553	0.007	13.56
3	2008-2009	1.117	0.000	1.117	<----Data not available ---->			11.015	0.019	11.034	8.105	0.007	8.112
4	2009-2010	1.469	0.000	1.469	<----Data not available ---->			4.573	0.010	4.583	3.876	0.004	3.880
5	2010-2011	0.721	0.001	0.722	0.301	0.040	0.341	2.130	0.010	2.140	1.302	0.004	1.306
6	2011-2012	0.721	0.001	0.722	2.330	0.270	2.600	18.823	0.014	18.837	10.747	0.006	10.753
7	2012-2013	1.314	0..001	1.314	1.868	0.169	2.037	7.530	0.016	7.546	2.185	0.006	2.191
8	2013-2014	0.786	0.009	0.795	2.638	0.197	2.835	9.598	0.037	9.635	2.400	0.003	2.402
9	2014-2015	0.983	0.001	0.984	2.643	0.101	2.744	7.117	0.007	7.124	0.824	0.001	0.825
10	2015-2016	0.516	0.004	0.520	1.317	0.043	1.360	5.684	0.008	5.691	2.180	0.002	2.181

Source: Suspended Sediment Year Book (2006 to 2016) Brahmani Basin.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

IV Basin: Godavari **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	**Godavari at Polavaram**			**Sabari at Konta**			**Godavari at Perur**			**Indravati at Pathagudem**		
1	2006-2007	62.373	0.160	62.533	40.954	0.137	41.091	211.994	0.010	212.004	24.353	0.011	24.364
2	2007-2008	44.728	0.180	44.908	10.306	0.213	10.519	31.520	0.001	31.521	25.505	0.008	25.513
3	2008-2009	24.420	0.028	24.448	4.501	0.119	4.620	23.618	0.007	23.625	7.807	0.004	7.811
4	2009-2010	12.067	0.027	12.094	2.031	0.027	2.058	6.801	0.003	6.804	5.237	0.000	5.237
5	2010-2011	76.467	0.135	76.602	24.421	0.423	24.844	74.426	0.205	74.631	15.620	0.008	15.628
6	2011-2012	18.025	0.110	18.135	2.149	0.174	2.323	59.054	0.008	59.062	7.144	0.000	7.144
7	2012-2013	37.552	0.096	37.648	4.135	0.126	4.261	59.332	0.059	59.391	12.298	0.000	12.298
8	2013-2014	86.219	0.055	86.274	7.705	0.417	8.122	266.352	0.252	266.604	16.971	0.000	16.971
9	2014-2015	32.118	0.023	32.141	7.183	0.414	7.597	40.661	0.021	40.682	11.035	0.002	11.037
10	2015-2016	28.123	0.033	28.156	N.O.	N.O.	N.O.	7.733	0.003	7.736	6.162	0.000	6.162
	Site Name	**Indravati at Jagadalpur**			**Pranhita at Tekra**			**Paddavagu at Bhatpalli**			**Wardha at Bamni**		
1	2006-2007	5.087	0.000	5.087	50.732	0.009	50.741	0.874	0.001	0.875	18.00	0.002	18.002
2	2007-2008	2.829	0.002	2.831	45.513	0.019	45.532	0.211	0.001	0.212	2.643	0.002	2.645
3	2008-2009	1.197	0.000	1.197	15.197	0.001	15.198	0.129	0..004	0.129	0.498	0.001	0.499
4	2009-2010	0.930	0.000	0.930	6.723	0.006	6.729	0.024	0.000	0.024	0.078	0.002	0.080
5	2010-2011	1.425	0.000	1.425	20.410	0.045	20.455	0.287	0.010	0.297	7.885	0.074	7.959
6	2011-2012	0.605	0.000	0.605	31.397	0.002	31.399	0.060	0.066	0.126	3.473	0.034	3.507
7	2012-2013	1.703	0.000	1.703	34.260	0.007	34.267	0.116	0.012	0.128	4.583	0.068	4.651
8	2013-2014	2.903	0.000	2.903	76.578	0.031	76.609	0.298	0.009	0.307	13.398	0.054	13.453
9	2014-2015	1.696	0.000	1.696	6.599	0.007	6.606	0.079	0.003	0.082	2.575	0.009	2.584
10	2015-2016	5.683	0.000	5.683	10.931	0.002	10.933	0.091	0.002	0.093	3.628	0.002	3.631

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Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

IV Basin: Godavari **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Penganga at PG Bridge			Wardha at Nandgaon			Wardha at Hivra			Wainganga at Ashti		
1	2006-2007	11.495	0.002	11.497	0.023	0.002	0.025	1.475	0.000	1.475	13.687	0.011	13.698
2	2007-2008	0.988	0.001	0.989	0.056	0.000	0.056	2.002	0.000	2.002	18.077	0.009	18.086
3	2008-2009	0.752	0.000	0.752	0.031	0.000	0.031	0.003	0.000	0.003	3.864	0.001	3.865
4	2009-2010	0.650	0.000	0.650	0.007	0.000	0.007	0.001	0.000	0.001	5.247	0.010	5.257
5	2010-2011	11.127	0.001	11.128	0.922	0.012	0.934	0.088	0.000	0.088	3.372	0.016	3.388
6	2011-2012	2.893	0.001	2.894	0.491	0.003	0.494	1.452	0.000	1.452	5.346	0.010	5.356
7	2012-2013	3.290	0.002	3.292	0.090	0.001	0.091	0.435	0.001	0.436	8.994	0.010	9.004
8	2013-2014	5.969	0.005	5.974	0.334	0.001	0.335	0.555	0.000	0.555	18.203	0.020	18.223
9	2014-2015	0.931	0.000	0.931	0.067	0.001	0.068	0.221	0.000	0.221	3.414	0.016	3.430
10	2015-2016	1.742	0.000	1.742	0.057	0.000	0.057	0.020	0.000	0.020	3.695	0.004	3.699
	Site Name	Kanhan at Satrapur			Bagh at Rajegaon			Wainganga at Kumhari			Godavari at Mancherial		
1	2006-2007	2.217	0.004	2.221	0.000	0.000	0.000	0.000	0.000	0.000	2.560	0.006	2.566
2	2007-2008	1.995	0.008	2.003	0.000	0.000	0.000	0.000	0.000	0.000	0.039	0.004	0.043
3	2008-2009	0.014	0.002	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.275	0.002	0.277
4	2009-2010	2.081	0.006	2.087	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.000	0.022
5	2010-2011	1.526	0.003	1.529	0.000	0.000	0.000	0.000	0.000	0.000	1.584	0.005	1.589
6	2011-2012	1.389	0.021	1.410	0.000	0.000	0.000	0.000	0.000	0.000	0.301	0.001	0.302
7	2012-2013	5.918	0.001	5.919	0.000	0.000	0.000	0.000	0.000	0.000	0.213	0.002	0.215
8	2013-2014	10.210	0.019	10.229	0.000	0.000	0.000	0.000	0.000	0.000	0.969	0.006	0.975
9	2014-2015	0.645	0.001	0.646	0.162	0.000	0.163	0.064	0.004	0.067	0.090	0.001	0.091
10	2015-2016	0.705	0.001	0.705	0.804	0.000	0.804	0.142	0.001	0.143	0.062	0.003	0.065
	Site Name	Manijira at Saigaon			Godavari at Dhalegaon			Wardha at Sakmur			Purna at Purna		
1	2006-2007	0.224	0.000	0.224	3.705	0.000	3.705				0.000	0.000	0.000
2	2007-2008	0.303	0.000	0.303	0.302	0.000	0.302				0.000	0.000	0.000
3	2008-2009	0.707	0.000	0.707	0.127	0.000	0.127				0.000	0.000	0.000
4	2009-2010	0.001	0.000	0.001	0.069	0.000	0.069				0.000	0.000	0.000
5	2010-2011	1.399	0.005	1.404	0.400	0.000	0.400				0.000	0.000	0.000
6	2011-2012	0.219	0.000	0.219	0.034	0.000	0.034				0.000	0.000	0.000
7	2012-2013	0.859	0.000	0.859	0.000	0.000	0.000				0.000	0.000	0.000
8	2013-2014	0.049	0.000	0.049	0.000	0.000	0.000				0.000	0.000	0.000
9	2014-2015	0.003	0.000	0.003	0.000	0.000	0.000	1.131	0.001	1.132	0.000	0.000	0.000
10	2015-2016	0.000	0.000	0.000	0.000	0.000	0.000	2.616	0.000	2.616	0.000	0.000	0.000

Source: Suspended Sediment Year Book (2006 to 2016) Godavari Basin.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

V Basin: Krishna **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	**Vijayawada**			**Keesara**			**Wadenapalli**			**Bawapuram**		
1	2006-2007	Sediment Observaton suspended on 31-05-2016 and restarted wef 01-03-2014.			Sediment Observaton suspended on 31-05-2016 and restarted wef 01-03-2014.			0.800	0.009	0.809	0.524	0.001	0.525
2	2007-2008							1.200	0.032	1.232	0.962	0.025	0.987
3	2008-2009							0.641	0.123	0.764	0.081	0.007	0.088
4	2009-2010							2.544	0.62	3.164	1.380	0.004	1.384
5	2010-2011							0.511	0.012	0.523	0.012	0.000	0.012
6	2011-2012							0.836	0.039	0.875	0.014	0.000	0.014
7	2012-2013							0.031	0.019	0.050	0.139	0.000	0.139
8	2013-2014	0.000	0.000	0.000	0.000	0.002	0.002	0.550	0.054	0.605	1.392	0.000	1.392
9	2014-2015	0.057	0.000	0.057	0.066	0.010	0.076	0.022	0.004	0.026	0.731	0.001	0.732
10	2015-2016	0.005	0.000	0.005	0.123	0.000	0.123	0.009	0.005	0.015	0.084	0.000	0.084
	Site Name	**Mantralayam**			**Marol**			**Haralahalli**			**Byladahalli**		
1	2006-2007	Sediment Observaton suspended on 31-05-2016 and restarted wef 01-06-2013.			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	2007-2008				0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	2008-2009				0.463	0.000	0.463	2.259	0.015	2.274	1.200	0.100	1.300
4	2009-2010				0.725	0.000	0.725	1.447	0.007	1.454	1.100	0.000	1.100
5	2010-2011				0.417	0.007	0.424	0.721	0.018	0.739	0.015	0.001	0.016
6	2011-2012				0.417	0.004	0.421	0.555	0.014	0.569	0.004	0.001	0.005
7	2012-2013				0.131	0.000	0.131	0.181	0.001	0.182	0.004	0.000	0.004
8	2013-2014	0.046	0.006	0.052	0.304	0.000	0.304	0.762	0.009	0.770	0.007	0.000	0.007
9	2014-2015	1.064	0.040	1.104	0.173	0.000	0.173	1.572	0.002	1.575	0.007	0.000	0.007
10	2015-2016	0.565	0.009	0.573	0.022	0.000	0.022	0.150	0.000	0.150	0.003	0.000	0.003

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Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

V Basin: Krishna **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	**Honnali**			**Shimoga**			**Yadgir**			**Malkhed**		
1	2006-2007	0.000	0.000	0.000	0.000	0.001	0.001	7.426	0.000	7.426	0.003	0.000	0.003
2	2007-2008	0.000	0.000	0.000	0.000	0.000	0.000	1.964	0.002	1.966	0.039	0.011	0.050
3	2008-2009	0.786	0.011	0.797	0.555	0.000	0.555	0.745	0.000	0.745	0.098	0.001	0.099
4	2009-2010	0.534	0.060	0.594	1.223	0.000	1.223	13.191	0.004	13.195	0.442	0.003	0.445
5	2010-2011	0.266	0.003	0.269	0.181	0.001	0.182	1.651	0.010	1.661	0.535	0.005	0.540
6	2011-2012	0.387	0.008	0.395	0.161	0.001	0.162	1.103	0.004	1.107	0.105	0.002	0.107
7	2012-2013	0.192	0.001	0.193	0.353	0..001	0.000	0.126	0.004	0.130	0.071	0.001	0.072
8	2013-2014	0.258	0.002	0.260	0.524	0.000	0.524	1.132	0.006	1.137	0.117	0.008	0.125
9	2014-2015	0.253	0.003	0.256	1.755	0.001	1.756	0.263	0.000	0.263	0.098	0.002	0.101
10	2015-2016	0.058	0.005	0.064	0.027	0.000	0.027	0.006	0.000	0.006	0.005	0.003	0.007
	Site Name	**Sarati**			**Huvinhedigi**			**Takali**			**Cholachagudda**		
1	2006-2007	0.000	0.000	0.000	0.000	0.000	0.000	0.194	0.000	0.194	2.539	0.000	2.539
2	2007-2008	0.000	0.000	0.000	0.000	0.000	0.000	0.206	0.000	0.206	8.460	0.000	8.460
3	2008-2009	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.000	0.060	0.608	0.000	0.608
4	2009-2010	0.000	0.000	0.000	0.000	0.000	0.000	0.462	0.000	0.462	0.549	0.000	0.549
5	2010-2011	0.000	0.000	0.000	0.000	0.000	0.000	0.108	0.000	0.108	0.939	0.000	0.939
6	2011-2012	0.000	0.000	0.000	0.000	0.000	0.000	0.331	0.000	0.331	0.178	0.000	0.178
7	2012-2013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.076	0.000	0.076
8	2013-2014	0.032	0.000	0.032	1.744	0.013	1.757	0.248	0.000	0.248	0.613	0.000	0.613
9	2014-2015	0.009	0.000	0.009	1.193	0.021	1.214	0.067	0.000	0.067	0.052	0.000	0.052
10	2015-2016	0.000	0.000	0.000	0.065	0.006	0.071	0.000	0.000	0.000	0.041	0.000	0.041
	Site Name	**Kurundwad**			**Karad**			**Warunji**			**Madhira**		
1	2006-2007	13.996	0.000	13.996	3.358	0.012	3.370	0.000	0.000	0.000			
2	2007-2008	3.295	0.000	3.295	0.745	0.010	0.755	0.000	0.000	0.000			
3	2008-2009	2.613	0.000	2.613	0.263	0.010	0.273	0.000	0.000	0.000			
4	2009-2010	2.014	0.000	2.014	0.105	0.004	0.109	0.000	0.000	0.000			
5	2010-2011	1.711	0.000	1.711	0.358	0.000	0.358	0.000	0.000	0.000			
6	2011-2012	1.987	0.000	1.987	0.731	0.000	0.731	0.000	0.000	0.000			
7	2012-2013	0.865	0.000	0.865	0.210	0.000	0.210	0.000	0.000	0.000			
8	2013-2014	2.907	0.000	2.907	0.556	0.000	0.556	0.333	0.000	0.333			
9	2014-2015	1.309	0.000	1.309	0.259	0.000	0.259	0.122	0.000	0.122	0.001	0.000	0.001
10	2015-2016	0.240	0.000	0.240	0.051	0.001	0.052	0.025	0.001	0.026	0.001	0.000	0.001
	Site Name	**Paleru Bridge**			**Dameracherla**			**Kuppelur**					
1	2006-2007												
2	2007-2008												
3	2008-2009												
4	2009-2010												
5	2010-2011												
6	2011-2012												
7	2012-2013												
8	2013-2014												
9	2014-2015	0.010	0.002	0.012	0.016	0.005	0.021	0.120	0.000	0.120			
10	2015-2016	0.001	0.000	0.001	0.002	0.000	0.002	0.007	0.000	0.007			

Source: Suspended Sediment Year Book (2006 to 2016) Krishna Basin.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

VI Basin : Cauvery — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	**Thengudi**			**Musiri**			**Nallamaranpatty**			**Elunuthimangalam**		
1	2006-2007	0.002	0.000	0.002	0.292	0.034	0.326	0.001	0.000	0.001	Data not available		
2	2007-2008	0.001	0.001	0.002	0.387	0.087	0.474	0.016	0.282	0.298			
3	2008-2009	0.003	0.003	0.006	0.170	0.040	0.210	0.015	0.001	0.016			
4	2009-2010	0.003	0.002	0.005	0.107	0.022	0.129	0.006	0.000	0.006			
5	2010-2011	0.002	0.001	0.003	0.132	0.048	0.180	0.000	0.000	0.000			
6	2011-2012	0.001	0.000	0.001	0.105	0.034	0.139	0.005	0.004	0.009			
7	2012-2013	0.001	0.000	0.001	0.043	0.008	0.051	0.000	0.000	0.000			
8	2013-2014	0.000	0.000	0.000	0.163	0.014	0.177	0.000	0.000	0.000	0.000	0.000	0.001
9	2014-2015	0.001	0.000	0.001	0.070	0.024	0.095	0.018	0.000	0.019	0.002	0.005	0.006
10	2015-2016	0.001	0.001	0.002	0.061	0.029	0.089	0.000	0.023	0.024	0.009	0.006	0.014
	Site Name	**Kodumudi**			**Savandapur**			**Thengumarahada**			**Nellithurai**		
1	2006-2007	0.085	0.056	0.141	0.073	0.006	0.079	0.005	0.003	0.008	0.040	0.006	0.046
2	2007-2008	0.032	0.054	0.086	0.020	0.005	0.024	0.020	0.005	0.025	0.050	0.000	0.050
3	2008-2009	0.011	0.044	0.055	0.006	0.004	0.010	0.009	0.002	0.011	0.015	0.001	0.016
4	2009-2010	0.014	0.038	0.052	0.006	0.002	0.008	0.046	0.004	0.050	0.040	0.000	0.040
5	2010-2011	0.032	0.042	0.074	0.028	0.002	0.030	0.026	0.004	0.030	0.041	0.004	0.045
6	2011-2012	0.019	0.059	0.078	0.007	0.002	0.009	0.015	0.005	0.020	0.040	0.008	0.048
7	2012-2013	0.064	0.017	0.081	0.001	0.003	0.004	0.002	0.001	0.003	0.019	0.002	0.021
8	2013-2014	0.149	0.020	0.169	0.005	0.001	0.006	0.007	0.000	0.007	0.034	0.004	0.038
9	2014-2015	0.098	0.035	0.133	0.037	0.001	0.039	0.000	0.000	0.001	0.022	0.005	0.026
10	2015-2016	0.024	0.007	0.031	0.002	0.001	0.004	0.000	0.000	0.000	0.023	0.004	0.027
	Site Name	**Urachikottai**			**Kudlur**			**Biligundulu**			**T.Bekuppe**		
1	2006-2007	0.034	0.003	0.037				0.129	0.016	0.145			
2	2007-2008	0.053	0.001	0.054				0.577	0.055	0.631			
3	2008-2009	0.004	0.001	0.005				0.416	0.015	0.431			
4	2009-2010	0.005	0.002	0.007	Data Not Available			0.268	0.010	0.279	Sediment observation started from 18/09/2013		
5	2010-2011	0.004	0.002	0.006				0.080	0.024	0.104			
6	2011-2012	0.008	0.009	0.017				0.124	0.013	0.137			
7	2012-2013	0.005	0.001	0.006				0.034	0.010	0.044			
8	2013-2014	0.063	0.013	0.076	0.001	0.000	0.001	0.108	0.007	0.115	0.004	0.007	0.012
9	2014-2015	0.045	0.021	0.065	0.006	0.001	0.006	0.056	0.009	0.065	0.007	0.003	0.011
10	2015-2016	0.046	0.012	0.058	0.002	0.000	0.002	0.046	0.007	0.053	0.008	0.003	0.012

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Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

VI Basin : Cauvery — **Unit : Millian Metric Tones**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(9)	(10)	(11)
	Site Name	T.K. Halli			Kollegal			T.Narsinpur			Kudige		
1	2006-2007	Sediment Observation not done			0.145	0.011	0.156	Sediment Observation not done			Sediment Observation not done		
2	2007-2008	Sediment Observation not done			0.280	0.017	0.297	Sediment Observation not done			Sediment Observation not done		
3	2008-2009	0.009	0.002	0.011	0.093	0.10	0.193	0.016	0.006	0.022	0.004	0.002	0.006
4	2009-2010	0.027	0.004	0.031	0.057	0.008	0.065	0.168	0.004	0.172	0.199	0.004	0.203
5	2010-2011	0.022	0.003	0.025	0.032	0.007	0.039	0.033	0.008	0.041	0.056	0.002	0.058
6	2011-2012	0.016	0.003	0.019	0.046	0.004	0.050	0.259	0.004	0.263	0.062	0.001	0.063
7	2012-2013	0.003	0.001	0.004	0.012	0.002	0.014	0.042	0.002	0.044	0.053	0.001	0.054
8	2013-2014	0.008	0.001	0.009	0.119	0.001	0.120	0.013	0.001	0.014	0.046	0.001	0.047
9	2014-2015	0.006	0.001	0.007	0.062	0.003	0.064	0.095	0.001	0.097	0.049	0.001	0.049
10	2015-2016	0.008	0.000	0.008	0.008	0.001	0.009	0.033	0.002	0.034	0.038	0.001	0.039
	Site Name	Muthankera			Akkihebbal			M.H.Halli			Sakleshpur		
1	2006-2007	Sediment Observation not done						Sediment Observation not done					
2	2007-2008	Sediment Observation not done						Sediment Observation not done					
3	2008-2009	0.181	0.003	0.184				0.002	0.002	0.004			
4	2009-2010	0.161	0.010	0.171	Observation started from 03/04/2014			0.011	0.003	0.014	Observation started from 30/09/2014		
5	2010-2011	0.105	0.008	0.113				0.005	0.003	0.008			
6	2011-2012	0.151	0.002	0.153				0.008	0.002	0.010			
7	2012-2013	0.069	0.001	0.070				0.006	0.003	0.009			
8	2013-2014	0.000	0.004	0.004	0.000	0.001	0.001	0.016	0.001	0.017	0.003	0.001	0.003
9	2014-2015	0.169	0.007	0.175	0.050	0.003	0.053	0.009	0.002	0.011	0.088	0.001	0.089
10	2015-2016	0.056	0.001	0.057	0.019	0.001	0.020	0.005	0.001	0.006	0.018	0.000	0.018

Source: Suspended Sediment and Bedmaterial Data Book (2006-2016) Cauvery Basin.

VII Basin: Pennar — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Site Name	Sagileru at Nandipalli			Pennar at Chennur			Kunderu at Alladupalli		
1	2006-2007	N.A.	N.A.	N.A.	Sediment Observation not done			Sediment Observation not done		
2	2007-2008	N.A.	N.A.	N.A.	Sediment Observation not done			Sediment Observation not done		
3	2008-2009	N.A.	N.A.	N.A.	0.312	0.012	0.324	0.001	0.000	0.001
4	2009-2010	N.A.	N.A.	N.A.	1.821	0.016	1.837	0.396	0.019	0.415
5	2010-2011	N.A.	N.A.	N.A.	0.933	0.066	0.999	0.365	0.184	0.549
6	2011-2012	N.A.	N.A.	N.A.		0.012	0.486	0.365	0.059	0.424
7	2012-2013	N.A.	N.A.	N.A.	0.165	0.002	0.167	0.135	0.013	0.148
8	2013-2014	0.000	0.000	0.000	0.825	0.024	0.849	0.491	0.042	0.533
9	2014-2015	0.000	0.000	0.000	0.522	0.007	0.529	0.322	0.025	0.347
10	2015-2016									

Source: Sediment Year Book (2006 to 2016)East Flowing Rivers.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

VIII Basin : East Flowing Rivers Mahanadi to Pennar — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Vamsadhara at Kashinagar			Rushikulya at Purushattampur			Nagavali at Srikakulam			Gundlakamma at Marella		
1	2006-2007	11.315	0.016	11.331	5.490	0.001	5.491	9.674	0.092	9.766	Sediment Observation not done		
2	2007-2008	6.433	0.051	6.484	3.380	0.001	3.381	6.430	0.033	6.463	0.033	0.023	0.056
3	2008-2009	5.956	0.003	5.959	0.729	0.000	0.729	1.429	0.036	1.465	0.043	0.016	0.059
4	2009-2010	3.386	0.012	3.398	0.946	0.000	0.946	0.675	0.006	0.681	0.054	0.166	0.220
5	2010-2011	<----Data not available ---->			1.281	0.055	1.336	0.503	0.002	0.505	0.072	0.015	0.087
6	2011-2012	1.243	0.014	1.257	0.815	0.000	0.815	0.640	0.002	0.642	0.008	0.003	0.011
7	2012-2013	0.956	0.007	0.963	0.615	0.000	0.615	1.413	0.003	1.416	0.032	0.000	0.032
8	2013-2014	1.767	0.060	1.827	2.288	0.001	2.289	1.688	0.029	1.718	0.100	0.008	0.108
9	2014-2015	3.289	0.001	3.290	0.584	0.000	0.584	3.380	0.017	3.397	0.018	0.004	0.022
10	2015-2016												

Source: Sediment Year Book (2006 to 2016)East Flowing Rivers.

IX Basin : East Flowing Rivers from Pennar to Kanyakumari — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Tambraparani at Murappanadu			Swarnamukhi at Naidupeta			Kalingi at Sulurpet			Ponniyar at Vazhavachanur		
1	2006-2007	0.000	0.000	0.000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.			
2	2007-2008	0.000	0.015	0.015	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Sediment Observation not done		
3	2008-2009	0.008	0.011	0.019	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.			
4	2009-2010	0.006	0.004	0.011	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.000	0.001	0.001
5	2010-2011	0.002	0.003	0.005	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.009	0.006	0.015
6	2011-2012	0.006	0.002	0.008	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.002	0.004	0.006
7	2012-2013	0.001	0.001	0.002	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.003	0.003	0.006
8	2013-2014	0.002	0.002	0.005	0.001	0.000	0.001	0.000	0.000	0.000	0.001	0.000	0.001
9	2014-2015	0.004	0.004	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
10	2015-2016												
	Site Name	Ponniar at Gummanur			Vaigai at Paramakudi			Suriliyar at Theni			Vaigai at Ambasamundram		
1	2006-2007	Sediment Observation not done			Sediment Observation not done			0.050	0.009	0.059	0.053	0.003	0.056
2	2007-2008							0.156	0.033	0.189	0.037	0.131	0.168
3	2008-2009	0.013	0.001	0.014				0.036	0.003	0.039	0.032	0.003	0.035
4	2009-2010	0.007	0.001	0.008				0.028	0.010	0.038	0.014	0.004	0.018
5	2010-2011	0.004	0.003	0.007				0.033	0.013	0.046	0.010	0.016	0.026
6	2011-2012	0.007	0.002	0.009				0.039	0.009	0.048	0.088	0.016	0.104
7	2012-2013	0.004	0.002	0.006				0.013	0.001	0.014	0.001	0.000	0.001
8	2013-2014	0.011	0.001	0.012	0.000	0.000	0.000	0.021	0.005	0.026	0.000	0.000	0.000
9	2014-2015	0.014	0.004	0.018	0.001	0.000	0.001	0.042	0.016	0.059	0.003	0.001	0.003
10	2015-2016												

Source: Sediment Year Book (2006 to 2016)East Flowing Rivers.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

X Basin : Narmada **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Orsang at Chandwada			Narmada at Garudeshwar			Mohgaon			Narmada at Mandleshwar		
1	2006-2007	2.259	0.000	2.259	6.639	0.060	3.005	3.637	0.003	3.640	23.348	0.070	23.418
2	2007-2008	1.191	0.000	1.191	3.310	0.044	4.501	1.021	0.001	1.022	3.620	0.061	3.681
3	2008-2009	0.733	0.000	0.733	0.040	0.000	0.773	0.646	0.000	0.646	0.357	0.258	0.615
4	2009-2010	0.047	0.000	0.047	0.719	0.008	0.727	0.646	0.000	0.646	1.250	0.383	1.633
5	2010-2011	0.676	0.000	0.676	0.311	0.000	0.311	2.986	0.000	2.986	2.825	0.386	3.211
6	2011-2012	0.258	0.000	0.258	0.084	0.000	0.084	2.680	0.005	2.685	5.269	0.276	5.545
7	2012-2013	0.011	0.000	0.011	0.028	0.000	0.028	1.719	0.001	1.720	3.054	0.257	3.311
8	2013-2014	0.309	0.000	0.309	2.768	0.000	2.768	2.061	0.002	2.063	6.693	0.328	7.020
9	2014-2015	0.009	0.000	0.009	0.104	0.000	0.104	1.777	0.008	1.785	0.739	0.247	0.985
10	2015-2016	0.001	0.000	0.001	0.058	0.000	0.058	1.097	0.002	1.099	1.482	0.155	1.636
	Site Name	Narmada at Handia			Narmada at Hoshangabad			Narmada at Sandia			Narmada at Manot		
1	2006-2007	45.195	0.293	45.488	21.224	0.064	21.288	17.84	0.125	17.965	2.397	0.002	2.399
2	2007-2008	8.953	0.986	9.939	3.247	48.000	51.247	0.226	0.011	0.237	1.844	0.002	1.846
3	2008-2009	5.449	0.128	5.577	6.548	0.005	6.553	1.005	0.006	1.011	1.556	0.000	1.556
4	2009-2010	20.454	0.148	20.602	14.346	0.013	14.359	47.17	0.042	47.212	0.821	0.002	0.823
5	2010-2011	8.459	0.184	8.643	2.678	0.084	2.762	4.006	0.422	4.428	0.876	0.002	0.878
6	2011-2012	20.530	0.047	20.577	11.068	0.122	11.190	37.841	0.497	38.338	2.759	0.003	2.762
7	2012-2013	25.036	0.033	25.069	32.740	0.123	32.863	15.153	0.153	0.000	1.085	0.001	1.086
8	2013-2014	57.331	0.117	57.447	338.237	0.074	338.31	15.097	0.133	0.000	1.629	0.004	1.633
9	2014-2015	3.432	0.107	3.539	13.948	0.092	14.040	3.321	0.071	0.000	0.990	0.001	0.992
10	2015-2016	3.936	1.085	5.020	5.171	0.037	5.208	0.566	0.058	0.625	0.617	0.000	0.617
	Site Name	Shakkar at Gadarwara			Narmada at Barmanghat			Banjar at Bamni					
1	2006-2007	2.654	0.000	2.654	3.190	0.040	3.230	0.325	0.000	0.325			
2	2007-2008	0.739	0.000	0.739	10.701	0.077	10.778	0.372	0.000	0.372			
3	2008-2009	0.093	0.000	0.093	1.844	0.006	1.850	0.209	0.000	0.209			
4	2009-2010	5.462	0.000	5.462	18.821	0.079	18.900	0.137	0.000	0.137			
5	2010-2011	0.663	0.000	0.663	1.663	0.160	1.823	0.186	0.000	0.186			
6	2011-2012	0.612	0.000	0.612	3.014	0.029	3.043	0.220	0.001	0.221			
7	2012-2013	1.229	0.000	1.229	1.576	0.035	1.611	0.085	0.001	0.000			
8	2013-2014	3.563	0.000	3.563	20.336	0.077	20.413	0.209	0.001	0.000			
9	2014-2015	0.437	0.000	0.437	4.226	0.061	4.287	0.132	0.003	0.135			
10	2015-2016	0.633	0.000	0.633	0.848	0.077	0.925	0.074	0.001	0.075			

Source: Sediment Data Book (2006 to 2016) Narmada Basin.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

XI Basin : Tapi — **Unit: Million Metric Tonnes**

Sl.No	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Tapi at Burhanpur			Tapi at Gopalkheda			Purna at Yerli			Tapi at Sarankheda		
1	2006-2007	4.001	0.001	4.002	1.449	0.000	1.449	30.361	0.000	30.361	27.657	0.000	27.657
2	2007-2008	11.278	0.001	11.279	2.300	0.006	2.306	11.279	0.000	11.279	27.782	0.000	27.782
3	2008-2009	2.348	0.001	2.349	0.230	0.000	0.230	0.668	0.000	0.668	2.779	0.000	2.779
4	2009-2010	1.269	0.011	1.280	0.508	0.000	0.508	0.558	0.001	0.559	5.015	0.000	5.015
5	2010-2011	2.947	0.000	2.947	5.757	0.000	5.757	5.777	0.000	5.777	10.276	0.000	10.276
6	2011-2012	Sediment Observation not done			2.016	0.000	2.016	1.281	0.000	1.281	5.232	0.000	5.232
7	2012-2013	1.084	0.000	1.084	9.114	0.000	9.114	3.900	0.000	3.900	32.525	0.000	32.525
8	2013-2014	14.063	0.000	14.063	7.070	0.000	7.071	7.584	0.000	7.584	21.797	0.000	21.797
9	**2014-2015**	8.969	0.000	8.969	4.985	0.000	4.986	4.979	0.041	5.020	9.093	0.000	9.093
10	**2015-2016**	0.761	0.000	0.761	2.570	0.000	2.570	6.623	0.000	6.623	6.943	0.000	6.943

Source: Sediment Data Book (2006 to 2016) Tapi & Other West Flowing Rivers .

XII Basin : West Flowing Rivers Tapi to Tadri — **Unit: Million Metric Tonnes**

Sl.No	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Ulhas at Badlapur			Purna at Mahuwa			Ambika at Gadat			Vaitarna at Durvesh		
1	2006-2007				0.869	0.000	0.869	0.805	0.000	0.805	2.649	0.000	2.649
2	2007-2008				0.604	0.000	0.604	0.401	0.000	0.401	1.571	0.000	1.571
3	2008-2009				0.332	0.000	0.332	0.583	0.000	0.583	1.829	0.000	1.829
4	2009-2010	Sediment Observations from 22-12-2014			0.059	0.000	0.059	0.174	0.000	0.174	0.677	0.000	0.677
5	2010-2011				0.154	0.000	0.154	0.150	0.000	0.150	1.589	0.001	1.590
6	2011-2012				0.137	0.000	0.137	0.427	0.000	0.427	2.257	0.001	2.258
7	2012-2013				0.078	0.000	0.078	0.106	0.000	0.106	0.801	0.000	0.801
8	2013-2014				0.294	0.000	0.294	0.297	0.000	0.297	1.354	0.000	1.354
9	2014-2015	-	0.005	0.005	0.096	0.000	0.096	0.056	0.000	0.056	1.322	0.000	1.322
10	2015-2016												

Source: Sediment Year Book (2006 to 2016)West Flowing Rivers.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

XIII Basin : West Flowing Rivers Tadri to Kanyakumari — **Unit: Million Metric Tonnes**

Sl.No	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	**Nethravathi at Bantwal**			**Payaswani at Erinijipuzha**			**Valapatanam at Perumannu**			**Kuttiyadi at Kuttitadi**		
1	2006-2007	Sediment Observation not done			Sediment Observation not done			Sediment Observation not done			N.A.	N.A.	N.A.
2	2007-2008										N.A.	N.A.	N.A.
3	2008-2009				0.108	0.001	0.109	0.091	0.001	0.092	N.A.	N.A.	N.A.
4	2009-2010				0.147	0.002	0.149	0.241	0.002	0.243	N.A.	N.A.	N.A.
5	2010-2011				0.167	0.002	0.169	0.104	0.002	0.106	N.A.	N.A.	N.A.
6	2011-2012				0.145	0.001	0.146	0.131	0.001	0.132	N.A.	N.A.	N.A.
7	2012-2013	0.477	0.000	0.477	0.086	0.001	0.087	0.095	0.001	0.096	N.A.	N.A.	N.A.
8	2013-2014	0.824	0.001	0.825	0.140	0.002	0.142	0.251	0.001	0.252	0.016	0.000	0.016
9	2014-2015	0.728	0.001	0.729	0.269	0.001	0.270	0.181	0.002	0.183	0.142	0.000	0.143
10	2015-2016												
	Site Name	**Chaliyar at Kuniyil**			**Kadalundi at Karathodu**			**Bharathapuzha at Kumbidi**			**Pulanthode at Pulamanthole**		
1	2006-2007	Sediment Observation not done			Sediment Observation not done			0.309	0.005	0.314	Sediment Observation not done		
2	2007-2008							0.551	0.020	0.571			
3	2008-2009	0.111	Sediment Obsn. Not done	0.111				0.126	0.004	0.130			
4	2009-2010	0.256	0.001	0.257				0.385	0.004	0.389	0.109	0.002	0.111
5	2010-2011	0.172	0.001	0.173	0.060	0.000	0.060	0.142	0.007	0.149	0.112	0.003	0.115
6	2011-2012	0.255	0.001	0.256	0.019	0.000	0.019	0.401	0.004	0.405	0.104	0.001	0.105
7	2012-2013	0.118	0.000	0.118	0.019	0.000	0.019	0.104	0.001	0.105	0.019	0.001	0.020
8	2013-2014	0.824	0.002	0.826	0.052	0.000	0.052	0.287	0.002	0.289	0.051	0.000	0.051
9	2014-2015	0.298	0.000	0.298	0.113	0.001	0.114	0.637	0.008	0.645	0.016	0.000	0.016
10	2015-2016												
	Site Name	**Bharathapuzha at Mankara**			**Bharathapuzha at Pudur**			**Aliyar at Ambarampalayam**			**Chalakudi at Arangaly**		
1	2006-2007	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Sediment Observation not done			Sediment Observation not done		
2	2007-2008	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.						
3	2008-2009	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.002	0.001	0.003	0.035	0.001	0.036
4	2009-2010	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.009	0.002	0.011	0.097	0.001	0.098
5	2010-2011	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.005	0.003	0.008	0.056	0.002	0.058
6	2011-2012	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.008	0.003	0.011	0.059	0.000	0.059
7	2012-2013	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.002	0.002	0.004	0.014	0.000	0.014
8	2013-2014	0.012	0.002	0.014	0.001	0.000	0.001	0.003	0.002	0.005	0.086	0.000	0.086
9	2014-2015	0.064	0.093	0.157	0.009	0.001	0.010	0.006	0.004	0.010	0.015	0.000	0.015
10	2015-2016												

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Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

XIII Basin : West Flowing Rivers Tadri to Kanyakumari — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Site Name	Periyar at Neeleswaram			Muvattupuzha at Ramamangalam			Kaliyar at Kalampur			Meenachil at Kidangoor		
1	2006-2007	0.076	Sediment Obsn. Not done	0.076	Sediment Observation not done			Sediment Observation not done			0.015	0.001	0.016
2	2007-2008	0.146	Sediment Obsn. Not done	0.146							0.028	0.001	0.029
3	2008-2009	0.054	Sediment Obsn. Not done	0.054	0.077	0.007	0.084	0.019	0.000	0.019	0.012	0.001	0.013
4	2009-2010	0.120	0.002	0.122	0.080	0.008	0.088	0.023	0.000	0.023	0.012	0.001	0.013
5	2010-2011	0.056	0.003	0.059	0.103	0.013	0.116	0.027	0.000	0.027	0.015	0.001	0.016
6	2011-2012	0.049	0.005	0.054	0.078	0.013	0.091	0.006	0.000	0.006	0.015	0.001	0.016
7	2012-2013	0.003	0.001	0.004	0.069	0.002	0.071	0.003	0.000	0.003	0.008	0.000	0.008
8	2013-2014	0.288	0.002	0.290	0.125	0.012	0.137	0.010	0.000	0.010	0.019	0.001	0.020
9	2014-2015	0.142	0.005	0.147	0.102	0.011	0.113	0.007	0.000	0.008	0.018	0.002	0.020
10	2015-2016												
	Site Name	Manimala at Kallooppara			Pumba at Malakkara			Achankovil at Thumpamon			Kallada at Pattazhy		
1	2006-2007	0.025	0.001	0.026	Sediment Observation not done			Sediment Observation not done			0.020	0.002	0.022
2	2007-2008	0.073	0.001	0.074							Sediment Observation not done		
3	2008-2009	0.026	0.000	0.026	0.022	0.000	0.022	0.036	0.000	0.036	0.007	0.002	0.009
4	2009-2010	0.031	0.001	0.032	0.032	0.001	0.033	0.029	0.001	0.030	0.013	0.006	0.019
5	2010-2011	0.043	0.001	0.044	0.050	0.001	0.051	0.085	0.003	0.088	0.087	0.015	0.102
6	2011-2012	0.038	0.001	0.039	0.004	0.000	0.004	0.020	0.001	0.021	0.032	0.008	0.040
7	2012-2013	0.008	0.000	0.008	0.013	0.000	0.013	0.009	0.000	0.009	0.007	0.001	0.008
8	2013-2014	0.045	0.001	0.046	0.077	0.000	0.077	0.025	0.001	0.026	0.028	0.005	0.033
9	2014-2015	0.059	0.002	0.061	0.023	0.029	0.052	0.017	0.001	0.018	0.029	0.005	0.034
10	2015-2016												
	Site Name	Vamanapuram at Ayilam											
1	2006-2007	0.039	0.000	0.039									
2	2007-2008	Sediment Observation not done											
3	2008-2009	0.013	0.000	0.013									
4	2009-2010	0.017	0.002	0.019									
5	2010-2011	0.009	0.004	0.013									
6	2011-2012	0.001	0.000	0.001									
7	2012-2013	0.001	0.000	0.001									
8	2013-2014	0.032	0.003	0.035									
9	2014-2015	0.034	0.003	0.036									
10	2015-2016												

Source: Sediment Year Book (2006 to 2016)West Flowing Rivers.

Table 9 : Time series of Sediment load by site in River Basin during 2006-2016

XIV Basin : Mahi — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Site Name	Mahi at Mataji			Mahi at Paderdibadi			Mahi at Khanpur		
1	2006-2007	4.262	0.000	4.262	5.760	0.000	5.760	24.257	0.000	24.257
2	2007-2008	2.046	0.000	2.046	0.157	0.000	0.157	1.876	0.005	1.881
3	2008-2009	0.046	0.000	0.046	0.013	0.000	0.013	0.069	0.002	0.071
4	2009-2010	2.311	0.000	2.311	0.006	0.000	0.006	0.002	0.000	0.002
5	2010-2011	0.082	0.000	0.082	0.003	0.000	0.003	0.111	0.000	0.111
6	2011-2012	0.231	0.000	0.231	0.046	0.000	0.046	0.905	0.000	0.905
7	2012-2013	0.202	0.000	0.202	0.142	0.000	0.142	1.088	0.000	1.088
8	2013-2014	0.111	0.000	0.111	0.072	0.000	0.000	1.073	0.000	1.073
9	2014-2015	0.035	0.000	0.035	0.005	0.000	0.000	0.239	0.000	0.239
10	**2015-2016**									

Source: Sediment Data Book (2006 to 2016) Mahi Flowing River Basins.

XV Basin: Sabarmati Unit: Million Metric Tonnes

SNo	Year	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)
	Site Name	Sabarmati at Derol Bridge		
1	2006-2007	0.615	0.000	0.615
2	2007-2008	0.030	0.000	0.030
3	2008-2009	0.000	0.000	0.000
4	2009-2010	0.000	0.000	0.000
5	2010-2011	0.001	0.000	0.001
6	2011-2012	0.016	0.000	0.016
7	2012-2013	0.001	0.000	0.001
8	2013-2014	0.001	0.000	0.001
9	2014-2015	0.001	0.000	0.001
10	2015-2016			

Source: Sediment Data Book (2006 to 2016) Sabarmati Flowing River Basins.

XVI Basin: WFR of Kutch, Saurashtra Including Luni — **Unit: Million Metric Tonnes**

SNo	Year	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual	Monsoon	Non-Monsoon	Annual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Site Name	Shetrunji at Lowara			Banas at Kamalpur			Bhadar at Ganod		
1	2006-2007	1.475	0.000	1.475	0.770	0.000	0.77	0.434	0.000	0.434
2	2007-2008	3.122	0.000	3.122	0.815	0.000	0.815	1.330	0.000	1.330
3	2008-2009	3.018	0.000	3.018	0.064	0.000	0.064	0.503	0.000	0.503
4	2009-2010	0.457	0.000	0.457	0.004	0.000	0.004	0.049	0.000	0.049
5	2010-2011	0.359	0.000	0.359	0.174	0.000	0.174	0.070	0.000	0.070
6	2011-2012	1.199	0.000	1.199	0.043	0.000	0.043	0.007	0.000	0.007
7	2012-2013	0.049	0.000	0.049	0.001	0.000	0.001	0.000	0.000	0.000
8	2013-2014	1.191	0.000	1.191	0.029	0.000	0.029	0.010	0.000	0.010
9	2014-2015	0.057	0.000	0.057	0.044	0.000	0.044	0.000	0.000	0.000
10	2015-2016									

Source: Sediment Data Book (2006 to 2016) WFR of Kutch, Saurashtra Including Luni Basins.

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

I Basin : Mahanadi **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Pairi at Baronda (Mahanadi)												
01-10 days	0	24	7	85	49	0	0	0	0	0	0	0
11-20 days	0	57	21	461	5	0	0	0	0	0	0	0
R - days	1	121	124	1868	3	0	0	0	0	0	0	0
Monthly	0	67	51	805	19	0	0	0	0	0	0	0
Mahanadi at Rajim												
01-10 days	0	0	0	0	0	0	0	0	0	0	0	0
11-20 days	0	304	0	838	0	0	0	0	0	0	0	0
R - days	39	339	0	2406	0	0	0	0	0	0	0	0
Monthly	13	214	0	1081	0	0	0	0	0	0	0	0
Mahanadi at Seorinarayan												
01-10 days	0	197	8491	2135	493	50	7	0	0	0	0	0
11-20 days	0	1826	6960	6060	83	24	5	0	0	0	0	0
R - days	949	3591	2039	19629	0	26	0	0	0	0	0	0
Monthly	316	1871	5830	9275	192	33	4	0	0	0	0	0
Mahanadi at Basantpur												
01-10 days	67	5067	14082	8047	1562	39	6	6	9	0	1	0
11-20 days	417	10594	36331	6657	1171	9	6	5	2	2	1	1
R - days	3922	13826	5030	24558	825	14	12	3	6	2	0	1
Monthly	1469	9829	18481	13087	1186	21	8	5	6	1	1	1
Seonath at Kotni (Mahanadi)												
01-10 days	0	0	0	0	817	0	0	0	0	0	0	0
11-20 days	0	0	0	0	0	0	0	0	0	0	0	0
R - days	0	0	0	30511	0	0	0	0	0	0	0	0
Monthly	0	0	0	10170	272	0	0	0	0	0	0	0
Seonath at Simga (Mahanadi)												
01-10 days	0	1806	1068	2790	5460	259	0	0	0	0	0	0
11-20 days	150	2021	1829	3002	262	27	0	0	0	0	0	0
R - days	2766	3827	531	7289	82	4	0	0	0	0	0	0
Monthly	972	2551	1143	4360	1935	97	0	0	0	0	0	0

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

I Basin : Mahanadi **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Hamp at Andhiarkhore (Mahanadi)												
01-10 days	0	52	31	52	3	6	0	0	0	0	0	0
11-20 days	1	95	39	182	1	4	0	0	0	0	0	0
R - days	468	16	23	531	3	2	0	0	0	0	0	0
Monthly	156	54	31	255	2	4	0	0	0	0	0	0
Arpa at Ghatora (Mahanadi)												
01-10 days	0	5	1377	135	8	0	0	0	0	0	0	0
11-20 days	0	100	1773	75	3	0	0	0	0	0	0	0
R - days	2	399	106	1586	1	0	0	0	0	0	0	0
Monthly	1	168	1085	599	4	0	0	0	0	0	0	0
Seonath at Jondhra (Mahanadi)												
01-10 days	0	0	9943	0	0	0	0	0	0	0	0	0
11-20 days	0	3132	48164	0	0	0	0	0	0	0	0	0
R - days	0	14995	26075	0	0	0	0	0	0	0	0	0
Monthly	0	6042	28061	0	0	0	0	0	0	0	0	0
Jonk at Rampur (Mahanadi)												
01-10 days	0	20	885	175	6	4	1	0	0	0	0	0
11-20 days	87	172	576	303	3	6	1	0	0	0	0	0
R - days	998	458	570	727	3	2	0	0	0	0	0	0
Monthly	362	217	677	402	4	4	1	0	0	0	0	0
Hasdeo at Manendragarh (Mahanadi)												
01-10 days	0	59	4	18	1	0	0	0	0	0	0	0
11-20 days	1	12	43	4	1	0	0	0	0	0	0	0
R - days	3	17	6	6	7	0	0	0	0	0	0	0
Monthly	1	29	18	9	3	0	0	0	0	0	0	0
Hasdeo at Bamnidhi (Mahanadi)												
01-10 days	122	291	581	507	41	6	2	2	4	0	2	1
11-20 days	114	398	838	138	41	2	2	4	2	0	5	1
R - days	120	376	572	202	19	5	4	3	5	0	1	2
Monthly	119	355	664	282	34	4	3	3	4	0	3	1

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

I Basin : Mahanadi **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Mand at Kurubhata (Mahanadi)												
01-10 days	0	25933	32826	8839	280	134	9	0	0	0	0	0
11-20 days	0	36320	22142	775	121	16	5	0	0	0	0	0
R - days	1043	20244	13962	5600	49	19	4	0	0	0	0	0
Monthly	348	27499	22977	5071	150	56	6	0	0	0	0	0
Ib at Sundergarh (Mahanadi)												
01-10 days	0	9509	19829	1714	55	18	1	0	0	0	0	0
11-20 days	0	82971	5438	121	29	2	0	0	0	0	0	0
R - days	518	40871	2493	1643	16	6	1	0	110	0	0	0
Monthly	173	44450	9253	1159	33	9	1	0	37	0	0	0
Ong at Salebhata (Mahanadi)												
01-10 days	0	8	374	729	13	0	0	0	0	0	0	0
11-20 days	0	180	411	46	4	0	0	0	0	0	0	0
R - days	0	1102	648	679	1	0	0	0	0	0	0	0
Monthly	0	430	478	485	6	0	0	0	0	0	0	0
Tel at Kesinga (Mahanadi)												
01-10 days	14441	9963	10098	20125	5485	170	10	2	21	0	17	30
11-20 days	18766	28885	32103	138792	1335	19	7	3	10	10	22	12
R - days	25268	20310	35529	67849	190	31	9	2	36	21	6	148
Monthly	19492	19719	25910	75589	2337	73	9	2	22	10	15	63
Tel at Kantamal (Mahanadi)												
01-10 days	398	3198	1043	2597	659	158	125	33	26	43	21	35
11-20 days	1707	8852	4419	42992	304	186	82	22	26	37	22	70
R - days	11004	2385	5707	24753	193	111	83	14	28	15	24	185
Monthly	4370	4812	3723	23447	385	152	97	23	27	32	22	97
Mahanadi at Tikarapara												
01-10 days	963	5182	46895	36682	2817	676	70	38	88	0	56	108
11-20 days	3907	27958	10211	31240	2172	184	52	93	40	128	107	50
R - days	12615	27609	18946	55187	6881	245	107	40	132	155	20	186
Monthly	5828	20250	25351	41036	3957	368	76	57	87	94	61	115

Source: Suspended Sediment Data Year Book (2015 - 2016) Mahanadi Basin.

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

II **Basin : Subernarekha** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Subernarekha at Jamshedpur												
01-10 days	35	3900	22260	1233	806	63	31	N.A.	23	26	26	23
11-20 days	64	16448	6960	1486	224	51	16	N.A.	23	23	22	26
R - days	676	32186	3079	1659	92	30	15	N.A.	26	21	19	28
Monthly	258	17511	10766	1459	374	48	21	N.A.	24	23	22	26
Subernarekha at Ghatsila												
01-10 days	25	286	8613	273	152	89	76	35	33	19	11	12
11-20 days	29	882	675	173	134	85	52	34	32	24	11	10
R - days	30	4992	406	247	92	89	43	32	22	23	12	11
Monthly	28	2053	3231	231	126	88	57	34	29	22	11	11
Kharkai at Adityapur (Subernarekha)												
01-10 days	56	2221	3447	1253	205	210	59	N.A.	93	34	46	59
11-20 days	47	2539	220	173	130	103	56	N.A.	43	30	44	76
R - days	100	22009	1188	517	135	58	51	N.A.	20	26	39	53
Monthly	68	8923	1618	648	157	124	55	N.A.	52	30	43	63
Govindpur (Subernarekha)												
01-10 days	40	67	100	121	58	45	25	30	21	11	7	3
11-20 days	38	63	58	161	70	40	18	27	17	8	8	2
R - days	69	188	72	115	47	41	21	25	17	11	7	1
Monthly	49	106	77	132	58	42	21	27	18	10	7	2

Source: Suspended Sediment Data Year Book (2015 - 2016) (Subernarekha & Burhabalang)

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

III	Basin: Brahmani & Baitarani											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Baitarani at Anandpur												
01-10 days	49	1265	4622	2421	748	205	131	66	36	33	27	10
11-20 days	70	1293	1894	1880	277	181	73	52	32	28	17	0
R - days	1409248	19713	2069	1822	296	185	78	45	29	29	11	23
Monthly	469789	7424	2862	2041	440	190	94	54	32	30	18	11
Baitarani at Champua												
01-10 days	13	1519	1915	1798	148	22	9	4	6	16	4	2
11-20 days	137	2918	691	850	95	28	10	7	5	8	3	41
R - days	3565	9253	2443	683	34	11	9	7	174	7	2	93
Monthly	1238	4563	1683	1110	92	20	9	6	62	10	3	45
Brahmani at Tilga												
01-10 days	0	4450	2061	1102	129	95	0	0	0	291	0	0
11-20 days	91	24490	1572	170	108	0	0	0	0	52	0	0
R - days	524	13086	914	1319	77	0	0	0	69	0	0	0
Monthly	205	14009	1516	864	105	32	0	0	23	114	0	0
Brahmani at Panposh												
01-10 days	64	19123	154107	32698	1898	401	79	61	35	40	40	10
11-20 days	4914	188903	32629	4848	599	221	55	51	34	32	18	38
R - days	2663	84668	24465	4740	327	144	57	40	31	39	17	65
Monthly	2547	97565	70400	14095	941	255	64	51	33	37	25	38
Brahmani at Gomlai												
01-10 days	11	14042	57822	9131	145	30	11	13	10	14	6	4
11-20 days	457	52223	6386	805	66	16	13	12	10	8	5	7
R - days	1057	58891	9008	1012	59	12	14	11	14	7	4	13
Monthly	508	41719	24405	3649	90	19	13	12	11	10	5	8
Brahmani at Jenapur												
01-10 days	1833	6594	27712	22193	1011	897	543	86	111	356	97	268
11-20 days	2724	10632	9474	11428	463	827	237	229	91	546	44	171
R - days	4188	15104	9552	1188	591	772	153	71	116	178	58	774
Monthly	2915	10777	15579	11603	688	832	311	129	106	360	66	404

Source: Suspended Sediment Data Year Book (2015 - 2016) Brahmani & Baitarani).

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

IV	Basin : Godavari											Unit : Metric Tonnes per day
`	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Godavari at Polavaram												
01-10 days	128	17507	29640	137941	8267	562	252	327	173	134	177	134
11-20 days	27469	3726	572757	446962	1199	425	301	168	179	182	89	95
R - days	923842	56432	82713	487589	811	345	278	261	129	147	111	86
Monthly	317146	25888	228370	357497	3426	444	277	252	160	154	126	105
Sabari at Konta (Godavari)												
01-10 days 11-20 days R - days Monthly	Bed Material samples not received for the year 2015-16											
Godavari at Perur												
01-10 days	48	4159	21978	88571	3529	92	51	31	20	21	8	1
11-20 days	1523	1810	167519	97013	294	62	39	19	16	21	4	2
R - days	180391	39829	57449	99158	116	29	41	19	13	17	4	3
Monthly	60654	15266	82315	94914	1313	61	44	23	16	20	5	2
Indravati at Pathagudem (Godavari)												
01-10 days	152	4156	4547	64242	4316	0	0	0	0	0	0	0
11-20 days	3913	3685	72734	140438	779	0	0	0	0	0	0	0
R - days	158289	20713	54770	75873	0	0	0	0	0	0	0	0
Monthly	54118	9518	44017	93518	1698	0	0	0	0	0	0	0
Indravati at Jagdalpur (Godavari)												
01-10 days	0	761	0	7649	192	0	0	0	0	0	0	0
11-20 days	1737	1235	9544	387079	14	0	0	0	0	0	0	0
R - days	36926	1706	8565	111844	0	0	0	0	0	0	0	0
Monthly	12888	1234	6036	168857	69	0	0	0	0	0	0	0
Pranahita at Tekra (Godavari)												
01-10 days	22	436	152068	45166	2578	264	47	18	15	10	5	1
11-20 days	60	723	438153	296910	428	179	15	12	9	9	3	1
R - days	82786	11820	27689	69509	251	110	22	16	8	6	2	1
Monthly	27623	4326	205970	137195	1086	184	28	15	11	8	3	1
Peddavagu at Bhatpalli (Godavari)												
01-10 days	7	281	32	103	28	20	12	14	7	30	5	6
11-20 days	204	16	705	2517	14	21	12	16	12	12	5	6
R - days	3187	1566	129	93	17	17	9	9	27	7	7	4
Monthly	1133	621	289	904	20	19	11	13	15	16	6	5

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

IV	Basin : Godavari											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Wardha at Bamni (Godavari)												
01-10 days	26	868	28220	2730	1297	182	23	11	13	9	1	0
11-20 days	1537	249	37636	233281	221	141	34	23	15	6	1	0
R - days	38230	2776	4625	9833	167	42	36	30	21	3	1	3
Monthly	13264	1298	23494	81948	562	122	31	21	16	6	1	1
Penganga at P.G.Bridge (Godavari)												
01-10 days	0	260	6424	40	20	3	0	0	0	0	0	0
11-20 days	29698	5	62835	21436	4	2	0	0	0	0	0	0
R - days	71454	26	120	2687	1	0	0	0	0	0	0	0
Monthly	33717	97	23126	8054	8	2	0	0	0	0	0	0
Wunna at Nandgaon (Godavari)												
01-10 days	0	15	830	496	8	65	14	0	1	0	0	0
11-20 days	0	0	2067	1141	26	15	15	3	1	0	0	0
R - days	91	802	62	51	66	3	4	4	1	0	0	0
Monthly	15	272	986	563	33	28	11	2	1	0	0	0
Wardha at Hivra (Godavari)												
01-10 days	0	2	828	5	0	2	2	1	1	1	0	0
11-20 days	0	2	986	68	0	1	1	1	1	0	0	1
R - days	18	13	35	6	0	8	1	1	0	0	0	16
Monthly	6	6	616	26	0	4	1	1	1	0	0	6
Wainganga at Asthi (Godavari)												
01-10 days	15	906	22739	14269	616	207	99	22	24	17	4	17
11-20 days	438	1378	189214	21851	535	258	86	19	6	13	1	11
R - days	70959	16402	12459	13861	380	59	43	12	28	13	6	5
Monthly	23804	6229	74804	16660	510	175	76	18	19	14	4	11
Kanhan at Satrapur (Godavari)												
01-10 days	7	7	15515	153	21	9	3	5	8	6	1	1
11-20 days	11	7	41325	669	12	6	2	11	6	2	1	1
R - days	7098	4567	283	284	9	5	2	6	5	1	1	3
Monthly	2372	1527	19041	369	14	7	2	7	6	3	1	2

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

IV	Basin : Godavari											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Khanan at Ramakona (Godavari)												
01-10 days	0	13	1667	47	9	10	0	0	0	0	0	0
11-20 days	435	55	2265	163	5	3	0	0	0	0	0	0
R - days	931	350	110	44	8	1	0	0	0	0	0	0
Monthly	455	139	1347	85	7	5	0	0	0	0	0	0
Bagh at Rajegaon (Godavari)												
01-10 days	0	965	3908	7142	1399	194	21	0	0	0	0	0
11-20 days	0	6180	13981	9265	1394	67	8	0	0	0	0	0
R - days	4127	11224	7735	10240	955	39	2	0	0	0	0	0
Monthly	1376	6123	8541	8882	1249	100	10	0	0	0	0	0
Wainganga at Kumhari (Godavari)												
01-10 days	1	24	5069	738	57	16	35	3	17	3	1	0
11-20 days	3	168	5505	187	48	21	10	12	9	2	0	0
R - days	87	1474	308	221	39	44	6	9	4	1	0	0
Monthly	30	555	3627	382	48	27	17	8	10	2	0	0
Wardha at Sakmur (Sirpur) (Godavari)												
01-10 days	147	1249	27719	2335	127	44	3	0	1	0	0	0
11-20 days	2001	121	41408	138881	11	9	1	1	0	0	0	0
R - days	30711	4352	3791	7878	6	3	1	2	1	0	0	0
Monthly	10953	1907	24306	49698	48	19	2	1	1	0	0	0
Godavari at Mancherial												
01-10 days	0	531	437	350	366	55	36	27	20	18	1	0
11-20 days	0	589	387	1035	230	45	31	24	20	8	0	0
R - days	502	650	359	473	77	43	26	24	19	1	0	0
Monthly	531	590	394	619	224	48	31	25	20	9	0	0
Manjira at Saigaon (Godavari)												
01-10 days	0	0	0	0	0	0	0	0	0	0	0	0
11-20 days	0	0	0	0	0	0	0	0	0	0	0	0
R - days	0	0	0	0	0	0	0	0	0	0	0	0
Monthly	0	0	0	0	0	0	0	0	0	0	0	0

Source: Suspended Sediment Data Year Book (2015 - 2016) Godavari Basin.

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

V	Basin : Krishna											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Krishna at Vijayawada												
01-10 days	0	0	0	0	0	0	0	0	0	0	0	0
11-20 days	42	0	0	0	0	0	0	0	0	0	0	0
R - days	418	0	0	0	0	0	0	0	0	0	0	0
Monthly	153	0	0	0	0	0	0	0	0	0	0	0
Munneru at Keesara (Krishna)												
01-10 days	0	432	113	828	421	4	2	0	0	0	0	0
11-20 days	1359	87	788	2748	153	2	3	0	0	0	0	0
R - days	3613	128	623	1198	53	7	0	0	0	0	0	0
Monthly	1657	216	508	1591	209	4	2	0	0	0	0	0
Wyra at Madhira (Krishna)												
01-10 days	0	4	2	3	0	1	0	0	0	0	0	0
11-20 days	6	1	4	8	1	1	0	0	0	0	0	0
R - days	21	1	2	4	0	1	0	0	0	0	0	0
Monthly	9	2	3	5	0	1	0	0	0	0	0	0
Paleru at Paleru Bridge (Krishna)												
01-10 days	5	9	0	6	0	0	1	0	0	0	0	0
11-20 days	22	3	1	15	0	0	1	0	0	0	0	0
R - days	25	2	2	1	0	0	0	0	0	0	0	0
Monthly	17	5	1	7	0	0	1	0	0	0	0	0
Krishna at Wadenapally												
01-10 days	3	33	24	28	30	86	14	52	61	1	11	5
11-20 days	22	99	10	30	116	94	10	12	109	69	7	23
R - days	49	97	14	30	130	13	60	0	19	22	7	49
Monthly	25	76	16	29	92	64	28	21	63	31	8	26
Musi at Damerachela (Krishna)												
01-10 days	0	8	0	45	0	3	0	0	0	0	0	0
11-20 days	19	2	5	34	0	2	0	0	0	0	0	0
R - days	34	0	59	2	2	1	0	0	0	0	0	0
Monthly	18	3	21	27	1	2	0	0	0	0	0	0

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

V **Basin : Krishna** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Tungabhadra at Bawapuram (Krishna)												
01-10 days	4	0	0	2615	727	1	6	1	0	0	0	0
11-20 days	3	0	0	3963	244	281	3	1	0	0	0	0
R - days	0	0	1	437	1	127	1	1	0	0	0	0
Monthly	2	0	0	2338	324	136	3	1	0	0	0	0
Tungabhadra at Mantralayam (Krishna)												
01-10 days	47	0	0	38617	2207	326	200	76	36	0	0	0
11-20 days	26	0	7	12206	622	793	118	114	7	0	0	0
R - days	5	9	96	1103	76	327	51	45	0	0	0	185
Monthly	26	3	34	17309	968	482	123	78	14	0	0	62
Varada at Marol (Krishna)												
01-10 days	0	42	38	1	37	0	0	0	0	0	0	0
11-20 days	0	23	46	7	5	0	0	0	0	0	0	0
R - days	1813	161	6	7	0	0	0	0	0	0	0	0
Monthly	604	75	30	5	14	0	0	0	0	0	0	0
Tungabhadra at Haralahalli (Krishna)												
01-10 days	89	365	423	59	439	107	9	0	0	4	0	0
11-20 days	33	994	534	62	71	29	1	0	0	2	1	5
R - days	7095	4048	113	95	23	12	0	1	0	0	0	11
Monthly	2406	1802	357	72	178	49	3	0	0	2	0	5
Haridra at Byalardahalli (Krishna)												
01-10 days	0	0	3	98	128	6	1	0	0	0	0	0
11-20 days	0	0	4	28	4	6	0	0	0	0	0	0
R - days	0	0	3	4	2	4	0	0	0	0	0	0
Monthly	0	0	3	43	45	5	0	0	0	0	0	0
Kumudavathi at Kuppelur (Krishna)												
01-10 days	0	66	72	38	61	0	0	0	0	0	0	0
11-20 days	0	36	65	47	27	0	0	0	0	0	0	0
R - days	48	115	63	30	12	0	0	0	0	0	0	0
Monthly	16	72	67	38	33	0	0	0	0	0	0	0

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

V **Basin : Krishna** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Tungabhadra at Honnali (Krisnha)												
01-10 days	23	162	467	128	255	128	40	20	13	47	29	23
11-20 days	26	1165	505	149	86	55	28	20	14	32	25	31
R - days	858	1243	211	84	100	48	26	37	46	26	20	26
Monthly	302	857	394	120	147	77	31	26	24	35	25	27
Tunga at Shimoga (Krishna)												
01-10 days	5	215	260	82	80	69	10	2	0	0	1	1
11-20 days	11	663	289	70	48	11	7	0	2	1	0	2
R - days	396	236	136	49	14	14	9	3	1	1	1	1
Monthly	137	371	228	67	47	31	9	2	1	1	1	1
Bhima at Yadgir (Krishna)												
01-10 days	0	0	0	46	105	6	0	0	0	0	0	0
11-20 days	0	5	6	161	55	0	0	0	0	0	0	0
R - days	0	0	40	103	28	0	0	0	0	0	0	0
Monthly	0	2	15	103	63	2	0	0	0	0	0	0
Kagna at Malkhed (Krishna)												
01-10 days	4	4	5	35	15	7	16	16	14	12	13	1
11-20 days	34	89	59	131	5	9	16	16	18	13	13	4
R - days	6	5	11	24	3	9	17	14	20	13	10	20
Monthly	15	33	25	63	8	8	16	15	17	13	12	8
Nira at Sarati (Krishna)												
01-10 days	0	0	0	0	0	0	0	0	0	0	0	0
11-20 days	0	0	0	0	0	0	0	0	0	0	0	0
R - days	0	0	0	0	0	0	0	0	0	0	0	0
Monthly	0	0	0	0	0	0	0	0	0	0	0	0
Krishna at Huvinhedigi												
01-10 days	26	34	72	899	827	219	195	20	0	0	0	62
11-20 days	34	113	104	2763	270	144	51	62	72	9	0	0
R - days	23	35	213	304	242	119	18	3	38	4	0	37
Monthly	28	61	130	1322	446	161	88	28	37	4	0	33

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

V **Basin : Krishna** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Bhima at Takali (Krishna)												
01-10 days	0	0	0	0	0	0	0	0	0	0	0	0
11-20 days	0	0	0	0	0	0	0	0	0	0	0	0
R - days	0	0	0	0	0	0	0	0	0	0	0	0
Monthly	0	0	0	0	0	0	0	0	0	0	0	0
Malaprabha at Cholachagudda (Seasonal) (Krishna)												
01-10 days	906	0	0	284	899	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	172	352	0	1228	148	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	0	45	0	0	0	49	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	359	132	0	504	349	16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Krishna at Kurundwad												
01-10 days	0	982	3429	473	748	0	0	0	0	0	0	0
11-20 days	0	0	1643	1001	66	0	0	0	0	0	0	0
R - days	10058	4131	661	323	0	0	0	0	0	0	0	0
Monthly	3353	1704	1911	599	271	0	0	0	0	0	0	0
Krishna at Arjunwad (Seasonal)												
01-10 days	0	187	1294	11	412	0	0	0	0	0	0	0
11-20 days	0	23	661	351	22	0	0	0	0	0	0	0
R - days	4192	659	134	74	0	0	0	0	0	0	0	0
Monthly	1397	290	696	145	145	0	0	0	0	0	0	0
Varna at Samdoli (Seasonal) (Krishna)												
01-10 days	0	77	727	61	131	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	0	22	295	115	6	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	4454	218	169	32	0	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	1485	106	397	69	46	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Krishna at Karad												
01-10 days	0	63	1134	0	0	0	0	75	0	0	0	0
11-20 days	0	0	539	0	0	18	0	0	0	0	0	0
R - days	2304	964	0	0	0	0	0	0	0	0	0	0
Monthly	768	342	558	0	0	6	0	25	0	0	0	0
Koyna at Warunji (Krishna)												
01-10 days	0	195	952	0	0	0	0	81	0	0	0	0
11-20 days	0	0	259	0	0	49	0	0	0	0	0	0
R - days	0	961	0	0	0	0	0	3	0	0	0	0
Monthly	0	385	404	0	0	16	0	28	0	0	0	0
Ghataprabha at Gokak Falls (Seasonal) (Krishna)												
01-10 days	0	34	20	19	7	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	0	21	21	21	2	4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	24	25	21	6	8	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	8	27	21	15	6	1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Source : Suspended Sediment Data Year book (2015 - 2016) Krishna Basin.

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

VI	Basin : Cauvery											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Thirumalairajanar at Thengudi (Cauvery)												
01-10 days	0	0	0	1	3	21	36	2	3	1	0	0
11-20 days	0	0	0	1	2	26	10	3	3	0	0	5
R - days	0	0	2	1	2	31	4	3	3	0	0	4
Monthly	0	0	1	1	2	26	17	3	3	0	0	3
Cauvery at Musiri												
01-10 days	26	2	185	870	568	540	1256	519	41	8	4	5
11-20 days	13	4	973	483	453	218	181	293	108	16	8	9
R - days	3	121	637	668	189	43	269	73	15	2	3	7
Monthly	14	42	598	674	403	267	569	295	55	9	5	7
Amaravathy at Nallamaranpatty (Cauvery)												
01-10 days	0	0	0	0	5	0	1845	1	1	0	0	0
11-20 days	0	1	0	0	0	5	498	0	0	0	0	0
R - days	0	1	0	7	0	10	1	1	0	0	0	0
Monthly	0	1	0	2	2	5	781	1	0	0	0	0
Noyyal at Elunuthimangalam (Cauvery)												
01-10 days	8	59	5	0	15	200	249	66	7	0	0	0
11-20 days	8	9	5	0	21	220	149	6	5	0	0	0
R - days	74	5	3	6	14	207	86	8	5	0	0	0
Monthly	30	24	4	2	17	209	161	27	6	0	0	0
Cauvery at Kodumudi												
01-10 days	55	6	25	214	127	1062	131	67	31	10	5	24
11-20 days	4	31	111	227	195	51	33	78	61	21	25	5
R - days	1	38	107	79	45	31	121	34	8	15	19	2
Monthly	20	25	81	173	122	381	95	60	33	15	16	10
Bhavani at Savandapur (Cauvery)												
01-10 days	3	10	10	16	10	9	8	3	10	5	14	3
11-20 days	1	31	17	9	66	7	5	13	3	3	9	2
R - days	4	12	15	9	7	5	2	4	7	5	7	2
Monthly	3	18	14	11	28	7	5	7	7	4	10	2

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

VI	Basin : Cauvery										Unit : Metric Tonnes per day	
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Moyar at Thengumarahada (Cauvery)												
01-10 days	0	0	0	0	0	0	0	0	0	0	0	0
11-20 days	0	0	0	0	0	0	0	0	0	0	0	0
R - days	3	0	0	0	0	0	0	0	0	0	0	0
Monthly	1	0	0	0	0	0	0	0	0	0	0	0
Bhavani at Nellithurai (Cauvery)												
01-10 days	2	104	30	177	4	99	1	0	0	0	53	2
11-20 days	24	105	181	34	34	25	0	67	0	0	94	43
R - days	981	214	44	91	96	0	0	0	0	57	33	22
Monthly	336	141	85	101	45	41	0	22	0	19	60	22
Cauvery at Urachikottai												
01-10 days	66	4	186	656	410	76	0	419	65	4	9	8
11-20 days	11	95	575	541	385	5	0	258	117	0	6	0
R - days	69	172	563	556	166	3	218	80	0	3	11	4
Monthly	49	90	441	584	320	28	73	252	61	2	9	4
Palar at Kudlur (Cauvery)												
01-10 days	0	0	0	0	27	67	20	0	0	0	0	0
11-20 days	0	0	49	0	30	13	17	0	0	0	0	0
R-days	0	0	0	0	4	5	10	0	0	0	0	0
Monthly	0	0	16	0	20	28	16	0	0	0	0	0
Cauvery at Biligundulu												
01-10 days	123	227	114	185	355	479	145	41	22	39	11	20
11-20 days	36	217	261	99	200	259	72	44	16	17	22	19
R - days	187	471	466	495	114	200	58	38	19	16	14	36
Monthly	115	305	280	260	223	313	92	41	19	24	16	25
Arkavathi at T. Bekuppe (Cauvery)												
01-10 dyas	23	22	17	86	29	88	32	14	11	3	4	14
11-20 days	22	39	51	60	16	108	19	9	6	9	3	43
R-days	18	21	46	75	12	106	13	8	8	7	5	96
Monthly	21	27	38	74	19	101	21	10	8	6	4	51
Shimsha at T.K.Halli (Cauvery)												
01-10 days	30	0	0	36	108	451	5	0	0	0	0	0
11-20 days	1	0	1	9	46	65	4	0	0	0	0	0
R - days	1	0	3	20	27	29	2	0	0	0	0	0
Monthly	11	0	1	22	60	182	4	0	0	0	0	0

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

VI Basin : Cauvery — Unit : Metric Tonnes per day

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Cauvery at Kollegal												
01-10 days	13	21	18	18	58	60	26	5	4	1	0	1
11-20 days	4	38	51	11	28	40	10	6	0	0	5	1
R - days	65	80	108	123	25	26	7	3	4	0	0	3
Monthly	27	46	59	51	37	42	14	5	3	0	2	2
Kabini at T.Narasipur (Cauvery)												
01-10 days	17	133	38	55	113	99	45	10	7	11	0	0
11-20 days	12	241	266	50	65	77	23	14	0	3	7	4
R - days	558	499	388	470	51	65	12	5	18	0	0	0
Monthly	196	291	231	192	76	80	27	10	8	5	2	1
Kabini at Muthankera (Cauvery)												
01-10 days	13	82	72	256	73	40	14	7	5	2	1	1
11-20 days	392	601	239	56	44	27	13	6	3	2	2	2
R - days	3379	144	53	83	25	23	9	6	3	1	1	3
Monthly	1261	276	121	132	47	30	12	6	4	2	1	2
Hemavathi at Akkihebbal (Cauvery)												
01-10 days	10	5	10	109	210	193	49	3	7	2	1	0
11-20 days	17	2	200	123	83	39	22	2	4	1	0	1
R-days	5	4	421	349	25	26	10	4	3	1	0	1
Monthly	11	4	210	194	106	86	27	3	5	1	0	1
Hemavathi at M.H.Halli (Cauvery)												
01-10 days	3	1	20	28	28	15	8	9	15	3	0	0
11-20 days	0	2	97	60	20	11	8	11	6	0	0	0
R - days	0	5	97	123	16	11	14	8	6	8	0	0
Monthly	1	3	71	70	21	12	10	9	9	4	0	0
Hemavathi at Sakleshpur (Cauvery)												
01-10 days	14	44	167	186	103	73	2	1	0	0	0	0
11-20 days	93	80	253	14	10	16	4	1	0	0	1	2
R-days	633	37	18	25	48	3	3	1	0	0	0	2
Monthly	247	54	146	75	54	31	3	1	0	0	0	1
Cauvery at Kudige												
01-10 days	4	94	139	140	126	74	24	7	2	1	0	0
11-20 days	24	444	139	101	83	93	8	5	1	0	1	1
R - days	1835	156	115	107	49	56	12	4	1	0	0	3
Monthly	621	231	131	116	86	74	15	5	1	0	0	1

Source: Suspended Sediment Data Year Book (2015 - 2016) Cauvery Basin

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

VII Basin : Pennar **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Pennar at Nellore												
01-10 days	0	0	0	0	0	0	174	3	1	5	6	0
11-20 days	0	0	0	0	0	2327	195	2	1	5	5	0
R - days	0	0	262	0	0	367	2	1	2	9	0	0
Monthly	0	0	87	0	0	898	124	2	1	6	4	0
Sagileru at Nandipalli (Pennar)												
01-10 days	0	0	0	0	0	0	4	0	0	0	0	0
11-20 days	0	0	0	0	0	1002	0	0	0	0	0	0
R - days	0	0	194	0	0	38	0	0	0	0	0	0
Monthly	0	0	65	0	0	347	1	0	0	0	0	0
Pennar at Chennur												
01-10 days	0	0	0	8	2382	0	50	3	0	0	1	0
11-20 days	4	0	0	1272	118	1258	16	0	0	0	7	0
R - days	2	0	819	5007	1	415	6	0	0	0	6	0
Monthly	2	0	273	2096	834	558	24	1	0	0	5	0
Kunderu at Alladupalli (Pennar)												
01-10 days	0	6	0	3	961	0	61	1	0	0	7	0
11-20 days	14	3	0	406	215	77	41	0	0	13	41	0
R - days	17	17	164	684	4	144	3	0	0	1	25	0
Monthly	10	9	55	364	393	74	35	0	0	5	24	0

Source: Suspended Sediment Data Year Book (2015 - 2016) Pennar Basin

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

VIII	Basin : East Flowing Rivers From Mahanadi to Pennar											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Gunupur (Vamsadhara) (EMP)												
01-10 days	171	915	1403	1613	768	48	N.A	N.A	2	1	3	1
11-20 days	1231	1369	895	20081	106	13	N.A.	N.A.	3	2	1	186
R - days	4524	1063	2936	3390	30	7	N.A.	N.A.	2	3	0	60
Monthly	1975	1116	1745	8361	301	23	N.A.	N.A.	2	2	1	82
Kashinagar (Vamsadhara) (EMP)												
01-10 days	2	606	519	2285	403	119	9	21	4	3	2	0
11-20 days	11	24	1691	17214	168	40	8	11	4	4	1	184
R - days	1296	1662	5282	11083	90	24	48	7	3	3	0	89
Monthly	436	764	2497	10194	220	61	22	13	4	3	1	91
Purushottampur (Rushikulya) (EMP)												
01-10 days	0	N.A.	206	2603	756	334	2	3	8	1	1	N.A.
11-20 days	266	363	2114	23553	137	30	2	4	6	1	1	0
R - days	10207	1621	2118	21596	45	14	8	1	6	1	0	3
Monthly	3491	992	1479	15917	313	126	4	3	7	1	1	2
Srikakulam (Nagavali) (EMP)												
01-10 days	140	N.A.	27	4007	508	96	47	16	6	8	8	N.A.
11-20 days	277	N.A.	2380	33741	205	106	14	20	3	0	5	0
R - days	788	N.A.	1482	7408	88	262	40	3	0	0	5	0
Monthly	402	N.A.	1296	15052	267	155	34	13	3	3	6	0
Gundlakamma at Marella (EMP)												
01-10 days	0	5	0	0	12	0	0	0	0	0	0	0
11-20 days	0	0	0	16	0	0	0	0	0	0	0	0
R - days	12	0	81	0	0	0	0	0	0	0	0	0
Monthly	4	2	27	5	4	0	0	0	0	0	0	0

Source: Suspended Sediment Data Year Book (2015 - 2016)

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

IX **Basin : East flowing Rivers Pennar to Kanyakumari** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Swarnamukhi at Naidupeta (EPK)												
01-10 days	0	0	0	0	0	0	7798	0	0	0	0	0
11-20 days	0	0	0	0	0	10674	13	1	0	0	0	0
R - days	0	0	0	0	0	3783	3	1	1	0	0	0
Monthly	0	0	0	0	0	4819	2605	1	0	0	0	0
Kalingi at Sulurpet (EPK)												
01-10 days	0	0	0	0	0	18	136	0	0	0	0	0
11-20 days	0	0	0	0	0	211	14	0	0	0	0	0
R - days	0	0	0	0	0	174	0	0	0	0	0	0
Monthly	0	0	0	0	0	134	50	0	0	0	0	0
Ponnaiyar at Vazhavachanur (EPK)												
01-10 days	0	0	0	0	0	45	225	17	1	30	0	4
11-20 days	0	0	0	0	0	46	96	12	16	7	2	7
R - days	0	0	0	0	0	144	27	9	8	0	0	1
Monthly	0	0	0	0	0	78	116	13	8	12	1	4
Ponnaiyar at Gummanur (EPK)												
01-10 days	61	22	29	472	413	358	64	37	22	34	16	1
11-20 days	29	22	50	73	149	167	79	23	15	15	15	6
R - days	31	50	54	105	24	137	42	29	20	46	12	91
Monthly	40	31	44	217	195	221	62	30	19	32	14	33
Vaigai at Paramakudi (EPK)												
01-10 days	0	0	0	0	0	0	30	22	0	0	0	0
11-20 days	0	0	0	0	0	0	22	10	0	0	0	0
R - days	0	0	0	0	0	0	21	0	0	0	0	0
Monthly	0	0	0	0	0	0	24	11	0	0	0	0
Suruliyar at Theni (EPK)												
01-10 days	3	131	168	66	121	235	984	139	103	40	12	9
11-20 days	2	231	142	48	72	1893	655	97	114	29	2	17
R - days	169	225	59	265	75	475	334	138	62	33	1	8
Monthly	58	196	123	126	89	868	658	125	93	34	5	11
Vaigai at Ambasamudram (EPK)												
01-10 days	0	0	0	0	0	37	530	2	0	0	0	0
11-20 days	0	0	0	0	0	509	186	0	0	0	0	0
R - days	0	0	0	0	0	151	58	0	0	0	0	0
Monthly	0	0	0	0	0	232	258	1	0	0	0	0
Tambraparani at Murappandu (EPK)												
01-10 days	5	5	14	4	10	33	594	54	16	20	8	10
11-20 days	6	7	8	6	7	128	451	11	6	15	8	25
R - days	8	13	4	10	6	125	156	12	9	6	4	3
Monthly	6	8	9	7	8	95	400	26	10	14	7	13

Source: Suspended Sediment Data Year Book (2015 - 2016) (East Flowing Rivers From Pennar to Kanyakumari)

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

X	Basin : Narmada											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Orsang at Chandwada (Narmada)												
01-10 days	N.A.	0	17	0	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	0	7	3	7	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	2	65	1	1	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	1	24	7	3	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Narmada at Garudeshwar												
01-10 days	0	0	2220	2	0	0	0	0	0	0	0	0
11-20 days	4	1	1157	3	0	0	0	0	0	0	0	0
R - days	55	1530	652	1	0	0	0	0	0	0	0	0
Monthly	20	510	1343	2	0	0	0	0	0	0	0	0
Narmada at Mandleshwar												
01-10 days	314	852	107311	2480	881	1013	1150	832	647	1157	1222	851
11-20 days	662	1628	15190	1601	1699	584	717	305	1081	746	1182	824
R - days	1926	3523	4334	1242	692	1366	876	827	533	715	558	962
Monthly	967	2001	42278	1774	1091	988	914	655	754	873	987	879
Narmada at Handia												
01-10 days	747	378	81725	20664	3085	294	313	444	415	228	343	401
11-20 days	834	34955	140065	11041	1439	252	329	45256	394	346	316	413
R - days	805	64890	16105	7028	754	333	308	52090	434	265	538	365
Monthly	795	33408	79298	12911	1759	293	317	32597	414	280	399	393
Narmada at Hoshangabad												
01-10 days	493	497	172246	9594	1665	293	138	146	272	144	179	237
11-20 days	380	60026	161198	3243	1651	307	178	137	262	269	233	227
R - days	390	42428	50580	2335	200	211	170	213	240	160	248	215
Monthly	421	34317	128008	5057	1172	270	162	165	258	191	220	226
Narmada at Sandia												
01-10 days	252	13037	4544	4301	202	296	105	343	296	587	348	319
11-20 days	176	14647	7969	998	397	121	277	301	503	588	110	159
R - days	235	6071	1608	501	286	196	274	495	321	197	232	295
Monthly	221	11252	4707	1933	295	204	219	380	373	457	230	258

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Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

X **Basin : Narmada** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Shakkar at Gadarwara (Narmada)												
01-10 days	N.A.	3	23297	335	22	8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	N.A.	1923	33156	226	13	7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	N.A.	2999	777	139	8	4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	N.A.	1642	19077	233	14	6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Narmada at Barmanghat												
01-10 days	780	2896	44616	4429	215	127	110	115	2392	141	240	131
11-20 days	387	3302	11800	268	205	87	76	106	3367	88	101	143
R - days	140	7672	5955	329	90	114	82	104	93	89	142	121
Monthly	436	4623	20790	1675	170	109	89	108	1951	106	161	132
Banjar at Bamini (Narmada)												
01-10 days	N.A.	N.A	1245	690	248	100	38	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	N.A.	1104	1066	534	148	72	28	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	N.A.	408	937	538	102	59	14	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	N.A.	756	1083	587	166	77	27	N.A.	N.A.	N.A.	N.A.	N.A.
Burhner at Mohgaon (Narmada)												
01-10 days	N.A.	7099	25047	1935	95	154	18	14	14	6	N.A.	N.A.
11-20 days	82	6622	6669	1007	65	47	14	13	12	18	N.A.	N.A.
R - days	44723	3254	7931	3795	61	28	13	16	10	9	N.A.	N.A,
Monthly	22403	5658	13216	2246	74	76	15	14	12	11	N.A.	N.A.
Narmada ar Manot												
01-10 days	0	4447	14275	1561	321	25	9	3	1	0	N.A.	N.A.
11-20 days	6	5464	7731	1202	90	18	5	2	1	0	N.A.	N.A.
R - days	10910	4937	7280	2177	34	15	3	2	0	0	N.A.	N.A.
Monthly	3639	4949	9762	1647	148	19	6	2	1	0	N.A.	N.A.

Source : Suspended Sediment Data Year Book (2015 - 2016) Narmada Basin.

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XI **Basin : Tapi** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Tapi at Burhanpur												
01-10 days	0	0	11565	692	180	0	0	0	0	0	0	0
11-20 days	132	0	22725	754	66	0	0	0	0	0	0	0
R - days	3695	31238	1289	471	7	0	0	0	0	0	0	0
Monthly	1276	10413	11860	639	84	0	0	0	0	0	0	0
Tapi at Gopalkheda												
01-10 days	N.A.	46	238814	139	89	N.A.	0	0	0	0	0	0
11-20 days	1788	0	11071	715	40	N.A.	0	0	0	0	0	0
R - days	974	2363	477	214	6	N.A.	0	0	0	0	0	0
Monthly	1381	803	83454	356	45	N.A.	0	0	0	0	0	0
Purna at Yerli (Tapi)												
01-10 days	N.A.	12	601183	793	2	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	34912	0	23249	9205	0	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	3947	2230	165	345	0	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	19430	747	208199	3448	1	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Tapi at Sarangkheda												
01-10 days	0	0	560313	300	0	0	0	0	0	0	0	0
11-20 days	0	0	41876	70940	0	0	0	0	0	0	0	0
R - days	0	18769	240	0	0	0	0	0	0	0	0	0
Monthly	0	6256	200810	23747	0	0	0	0	0	0	0	0
Purna at Mahuwa (Tapi)												
01-10 days	0	0	88	0	2	0	0	0	0	0	0	0
11-20 days	0	0	5	229	0	0	0	0	0	0	0	0
R - days	0	2499	1	37	0	0	0	0	0	0	0	0
Monthly	0	833	31	89	1	0	0	0	0	0	0	0
Ambika at Gadat (Tapi)												
01-10 days	0	0	292	4	51	0	0	0	0	0	0	0
11-20 days	0	0	46	3556	17	0	0	0	0	0	0	0
R - days	0	396	33	170	0	0	0	0	0	0	0	0
Monthly	0	132	124	1243	23	0	0	0	0	0	0	0
Vaitarna at Durvesh (Tapi)												
01-10 days	0	60	821	122	106	0	0	0	0	0	0	0
11-20 days	0	37	264	589	37	0	0	0	0	0	0	0
R - days	1020	24820	1001	2042	0	0	0	0	0	0	0	0
Monthly	340	8306	695	918	48	0	0	0	0	0	0	0

Source: Suspended Sediment Data Year Book (2015 - 2016) Tapi Basin.

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XII **Basin : West Flowing Rivers From Tapi to Tadri** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Ulhas at Badlapur (WTT)												
01-10 days	23	49	238	93	118	33	21	9	11	10	12	0
11-20 days	50	72	156	408	59	24	17	7	14	10	7	0
R - days	268	643	239	221	37	37	9	9	10	6	0	0
Monthly	114	255	211	241	71	31	16	8	12	9	6	0

Source: Suspended Sediment Data Year Book (2015 - 2016) (West Flowing Rivers From Tapi to Tadri)

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XIII **Basin : West Flowing Rivers From Tadri to Kanyakumari** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Kal at Mangaon (WTK)												
01-10 days	0	148	378	162	252	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	155	173	296	913	130	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	843	742	290	460	12	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	333	354	321	512	131	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Nehravathi at Bantwal (WTK)												
01-10 days	8	859	2794	176	298	1533	55	8	0	0	47	0
11-20 days	350	6755	2023	144	156	74	34	0	0	0	5	0
R - days	4497	1676	580	144	103	69	11	0	0	46	26	0
Monthly	1618	3097	1799	155	186	559	33	3	0	15	26	0
Payaswani at Erinjipuzha (WTK)												
01-10 days	29	237	1266	123	303	131	55	8	2	0	0	0
11-20 days	110	3456	1320	96	126	53	27	4	2	0	0	0
R - days	933	2013	305	122	55	73	15	2	1	0	0	0
Monthly	357	1902	964	114	161	86	32	5	2	0	0	0
Valapatanam at Perumannu (WTK)												
01-10 days	13	187	289	103	266	28	23	8	5	1	1	1
11-20 days	57	854	466	94	70	53	2	14	20	1	1	1
R-days	4527	309	130	182	17	34	2	28	1	1	1	3
Monthly	1532	450	295	126	118	38	9	17	9	1	1	2
Kuttiyadi at Kuttitadi (WTK)												
01-10 days	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0	0	0	0	0	1
11-20 days	N.A,	N.A.	N.A.	N.A.	N.A.	N.A.	0	0	0	0	1	1
R - days	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1	0	0	0	1	3
Monthly	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0	0	0	0	1	2

Contd/….

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XIII	Basin : West Flowing Rivers From Tadri to Kanyakumari											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Chaliyar at Kuniyil (WTK)												
01-10 days	0	464	218	659	586	211	0	0	0	0	0	0
11-20 days	0	878	630	193	206	210	0	0	0	0	0	0
R - days	7270	384	218	330	128	234	0	0	0	0	0	0
Monthly	2423	575	355	394	307	218	0	0	0	0	0	0
Kadalundi at Karathodu (WTK)												
01-10 days	20	192	60	270	113	80	0	0	0	0	0	0
11-20 days	48	163	180	57	138	51	21	0	0	0	0	0
R - days	1203	176	87	24	38	16	0	0	0	0	0	0
Monthly	424	177	109	117	96	49	7	0	0	0	0	0
Bharathapuzha at Kumbidi (WTK)												
01-10 days	45	964	600	462	1410	1173	162	30	11	0	1	0
11-20 days	119	1138	1507	260	605	496	241	9	0	0	0	4
R - days	5945	3877	697	375	177	159	82	21	0	0	0	5
Monthly	2036	1993	935	366	731	609	162	20	4	0	0	3
Pulanthodu at Pulmanthole (WTK)												
01-10 days	10	66	51	70	62	88	15	5	2	0	2	0
11-20 days	18	84	99	17	36	40	24	3	1	2	0	6
R-days	241	77	36	11	13	17	10	2	2	0	0	5
Monthly	90	76	62	33	37	48	16	3	2	1	1	4
Bharathapuzha at Mankara (WTK)												
01-10 days	35	63	38	37	66	158	1336	6	6	0	5	7
11-20 days	51	182	107	20	10	42	78	10	1	0	7	7
R-days	748	95	50	23	4	13	7	14	1	0	0	1
Monthly	278	113	65	27	27	71	474	10	3	0	4	5
Bharathapuzha at Pudur (WTK)												
01-10 days	4	15	15	6	20	40	56	2	1	0	0	0
11-20 days	29	38	72	7	1	11	6	3	1	0	0	2
R - days	224	34	7	12	1	3	1	3	0	0	0	1
Monthly	86	29	31	8	7	18	21	3	1	0	0	1

Contd/….

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XIII	Basin : West Flowing Rivers From Tadri to Kanyakumari										Unit : Metric Tonnes per day	
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Aliyar at Ambarampalayam (WTK)												
01-10 days	8	11	12	24	5	22	263	29	22	11	9	8
11-20 days	18	10	40	14	4	8	45	28	20	11	7	7
R - days	12	8	10	10	17	45	26	22	19	8	6	11
Monthly	13	10	21	16	9	25	111	26	20	10	7	9
Chalakudy at Arangaly (WTK)												
01-10 days	3	10	23	39	34	10	6	1	1	0	1	1
11-20 days	8	43	138	16	18	7	16	1	1	0	1	1
R - days	139	109	39	29	10	7	4	1	1	0	0	1
Monthly	50	54	67	28	21	8	9	1	1	0	1	1
Periyar at Neeleswaram (WTK)												
01-10 days	26	172	57	293	430	124	190	3	2	1	11	11
11-20 days	143	560	599	46	144	88	120	5	1	5	6	7
R - days	2450	1040	150	175	120	125	3	10	5	0	8	17
Monthly	873	591	269	171	231	112	104	6	3	2	8	12
Muvattupuzha at Ramamangalam (WTK)												
01-10 days	71	151	24	192	232	278	94	12	9	37	25	35
11-20 days	139	354	172	46	119	129	356	19	22	42	12	27
R - days	1052	176	15	422	105	51	18	10	47	48	19	49
Monthly	421	227	70	220	152	153	156	14	26	42	19	37
Kaliyar at Kalampur (WTK)												
01-10 days	1	12	7	5	6	23	10	0	0	0	0	0
11-20 days	8	35	41	3	3	4	5	0	0	0	0	0
R - days	95	27	3	27	6	2	1	0	0	0	0	2
Monthly	35	25	17	12	5	10	5	0	0	0	0	1
Meenachil at Kidangoor (WTK)												
01-10 days	16	37	13	57	82	82	17	2	0	0	0	0
11-20 days	19	47	112	17	32	25	36	1	0	0	0	6
R - days	343	93	48	55	31	24	5	0	0	0	0	36
Monthly	126	59	58	43	48	44	19	1	0	0	0	14

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XIII	Basin : West Flowing Rivers From Tadri to Kanyakumari											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Manimala at Kallooppara (WTK)												
01-10 days	12	72	11	138	310	231	40	1	0	0	0	1
11-20 days	54	20	114	22	152	56	64	1	0	0	0	34
R - days	1041	34	25	144	152	38	3	0	0	0	0	193
Monthly	369	42	50	101	205	108	36	1	0	0	0	76
Pamba at Malakkara (WTK)												
01-10 days	4	20	7	11	57	117	13	1	0	0	0	2
11-20 days	13	25	64	12	62	32	76	0	0	1	1	11
R - days	272	33	9	48	19	10	3	0	0	0	1	17
Monthly	96	26	27	24	46	53	31	0	0	0	1	10
Achankovil at Thumpamon (WTK)												
01-10 days	4	9	4	19	104	83	5	1	0	0	0	0
11-20 days	3	11	46	6	67	58	16	0	0	0	0	19
R - days	152	11	8	49	54	10	2	0	0	0	0	8
Monthly	53	10	19	25	75	50	8	0	0	0	0	9
Kallada at Pattazhy (WTK)												
01-10 days	40	53	42	13	56	114	47	10	3	5	6	5
11-20 days	33	38	50	23	67	85	36	3	7	8	4	109
R - days	167	39	11	22	83	33	27	3	3	6	5	118
Monthly	80	43	34	19	69	77	37	5	4	6	5	77
Vamanapuram at Ayilam (WTK)												
01-10 days	11	15	6	63	425	68	21	1	0	0	0	0
11-20 days	4	47	47	50	68	99	20	0	0	0	0	29
R - days	379	25	18	46	46	22	8	0	0	0	0	107
Monthly	131	29	24	53	180	63	16	0	0	0	0	45

Source: Suspended Sediment Data Year Book (2015 - 2016) (West Flowing Rivers from Tadri to Kanyakumari)

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XIV	Basin : Mahi											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Mahi at Mataji												
01-10 days	0	0	1838	1	0	0	0	0	0	0	0	0
11-20 days	0	1726	589	0	0	0	0	0	0	0	0	0
R - days	0	19974	65	0	0	0	0	0	0	0	0	0
Monthly	0	7233	831	0	0	0	0	0	0	0	0	0
Mahi at Paderdibadi												
01-10 days	0	0	3123	10	6	3	1	11	3	0	0	0
11-20 days	0	0	477	12	3	3	13	3	1	0	0	0
R - days	0	3689	78	33	2	6	24	2	1	0	0	0
Monthly	0	1230	1226	18	4	4	13	5	2	0	0	0
Mahi at Khanpur												
01-10 days	0	0	1500	1	2	1	0	0	0	0	0	0
11-20 days	0	0	150	2	1	1	0	0	0	0	0	0
R - days	24	9795	10	2	1	1	0	0	0	0	0	0
Monthly	8	3265	553	2	1	1	0	0	0	0	0	0

Source : Suspended Sediment Data Year Book (2015 - 2016) Mahi Basin. 1

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XV	Basin : Sabarmati											Unit : Metric Tonnes per day
Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Sabarmati at Derol Bridge (Sabarmati)												
01-10 days	0	0	162	0	0	0	0	0	0	N.A.	N.A.	N.A.
11-20 days	0	0	140	0	0	0	0	0	0	N.A.	N.A.	N.A.
R - days	5	689	14	0	0	0	0	0	0	N.A.	N.A.	N.A.
Monthly	2	230	105	0	0	0	0	0	0	N.A.	N.A.	N.A.

Source : Suspended Sediment Data Year Book (2015 - 2016) Sabarmati Basin.

Table 10 : Ten daily and monthly average Sediment Load by site and river basin during 2015-16

XVI **Basin : WKS (West Flowing Rivers of Kutch & Saurashtra including Luni)** **Unit : Metric Tonnes per day**

Site / Period	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Bhadar at Ganod (WKS)												
01-10 days	0	0	0	0	0	0	0	N.A.	0	N.A.	N.A.	N.A.
11-20 days	0	0	0	0	0	0	0	N.A.	0	N.A.	N.A.	N.A.
R - days	385	0	0	0	0	0	0	N.A.	0	N.A.	N.A.	N.A.
Monthly	128	0	0	0	0	0	0	N.A.	0	N.A.	N.A.	N.A.
Shetrunji at Lowara (WKS)												
01-10 days	0	0	1	0	0	0	0	0	0	0	0	N.A.
11-20 days	245	0	62	41952	0	0	0	0	0	0	0	N.A.
R - days	114805	1197	0	69	0	0	0	0	0	0	0	N.A.
Monthly	38350	399	21	14007	0	0	0	0	0	0	0	N.A.
Banas at Kamalpur (WKS)												
01-10 days	N.A.	N.A.	402	N.A.	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11-20 days	N.A.	N.A.	0	N.A.	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
R - days	N.A.	53343	N.A.	17	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Monthly	N.A.	53343	201	17	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Source: Suspended Sediment Data Year Book (2015 - 2016) West Flowing Rivers From Katch & Saurashtra including Luni)

Tolerance and Classification

As per IS: 2296-1992, the tolerance limits of parameters are specified as per classified use of water depending on various uses of water. The following classifications have been adopted in India.

Designated Best Uses of Water

Designated Best Use	Class	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	1.Total Coliforms Organism MPN/100ml shall be 50 or less 2. pH between 6.5 and 8.5 3. Dissolved Oxygen 6mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C, 2mg/l or less
Outdoor bathing (Organised)	B	1.Total Coliforms Organism MPN/100ml shall be 500 or less 2. pH between 6.5 and 8.5 3. Dissolved Oxygen 5mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C, 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	1. Total Coliforms Organism MPN/100ml shall be 5000 or less 2. pH between 6 and 9 3. Dissolved Oxygen 4mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C, 3mg/l or less
Propagation of Wild life and Fisheries	D	1. pH between 6.5 and 8.5 2. Dissolved Oxygen 4mg/l or more 3. Free Ammonia (as N) 4. Biochemical Oxygen Demand 5 days 20 °C, 2mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	1. pH between 6.0 and 8.5 2. Electrical Conductivity at 25 °C micro mhos/cm, maximum 2250 3. Sodium absorption Ratio Max. 26 4. Boron Max. 2mg/l
	Below - E	Not meeting any of the A, B, C,D & E criteria

Source: CPCB

Table 11: Water Quality Standards in India (Source IS 2296:1992)

S. No	Characteristics	Designated best use				
		A	B	C	D	E
1	Dissolved Oxygen (DO) mg/l. min	6	5	4	4	-
2	Biochemical Oxygen demand (BOD) mg/l.max	2	3	3	-	-
3	Total coliform organisms MPN /100 ml.max	50	500	5000	-	-
4	pH value	6.5-8.5	6.5-8.5	6.0-9.0	6.5-8.5	6.0-8.5
5	Colour. Hazen units. max	10	300	300	-	-
6	Odour	Un-objectionable			-	-
7	Taste	Tasteless	-	-	-	-
8	Total dissolved solids. mg/l. max.	500	-	1500	-	2100
9	Total hardness (as CaCO3),mg/l.max	200	-	-	-	-
10	Calcium hardness (as CaCO3), mg/l.max	200	-	-	-	-
11	Magnesium hardness (as CaCO3), mg/l.max.	200	-	-	-	-
12	Copper (as Cu).mg/l.max	1.5	-	1.5	-	-
13	Iron (as Fe). Mg/l max.	0.3	-	0.5	-	-
14	Manganese (as Mn).mg/l.max	0.5	-	-	-	-
15	Chloride (as Cl). mg/l.max	250	-	600	-	600
16	Sulphates (as SO4). mg/l. max	400	-	400	-	1
17	Nitrate (as NO3). mg/l. max	20	-	50	-	-
18	Fluorides (as F). mg/l. max	1.5	1.5	1.5	-	-
19	Phenolic compounds (as C2H5OH). mg/l. max	0.002	0.005	0.005	-	-
20	Mercury (as Hg). mg/l.max.	0.001	-	-	-	-
21	Cadmium (as Cd).mg/l.max	0.01	-	0.01	-	-
22	Selenium (as Se).mg/l.max	0.01	-	0.05	-	-
23	Arsenic (as As).mg/l.max	0.05	0.2	0.2	-	-
24	Cyanide (as Pb).mg/l.max	0.05	0.05	0.05	-	-
25	Lead (as Pb).mg/l.max	0.1	-	0.1	-	-
26	Zinc (as Zn).mg/l.max	15	-	15	-	-
27	Chromium (as Cr6+).mg/l.max	0.05	-	0.05	-	-
28	Anionic detergents (sa MBAS). mg/l.max	0.2	1	1	-	-
29	Barium (as Ba).mg/l.max	1	-	-	-	-
30	Free Ammonia (as N)). Mg/l.max	-	-	-	1.2	-
31	Electrical Conductivity. Micromhos/cm. max.	-	-	-	-	2250
32	Sodium absorption ratio. max	-	-	-	-	26
33	Boron. Mg/l. max	-	-	-	-	2

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

I Basin : Mahanadi

Sl. No.	Site Name	Summer March,2016 to May,2016		Monsoon June,2015 to Oct,2015		Winter Nov,2015 to Feb,2016	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Rajim**			DO = 5.4	01/08/2015		
2	**Seorinarayan**	DO = 5.6	01/04/2016	DO = 4.7	01/07/2015		
		DO = 5.4	01/05/2016	DO = 5.5	01/08/2015		
		pH=8.7	01/03/2016	DO = 5.9	01/10/2015		
		pH=8.6	01/04/2016	pH=8.9	01/06/2015	pH=8.7	01/02/2016
3	**Basantpur**	pH=8.6	01/04/2016	DO = 5.5	01/06/2015		
		pH=8.7	02/05/2016	DO = 4.6	01/07/2015		
				DO = 3.5	01/08/2015		
				DO = 5.7	01/09/2015		
				DO = 5.6	01/10/2015		
4	**Pathardih**			DO = 2.5	01/07/2015	DO = 3.6	02/11/2015
				DO = 5.4	01/08/2015	DO = 2.5	01/12/2015
				DO = 3.9	01/09/2015		
				DO = 5.3	01/10/2015		
5	**Simga**	BOD = 2.2	01/03/2016	BOD = 2.9	01/07/2015		
		DO = 5.8	01/04/2016	DO = 4.7	01/07/2015		
				DO = 5.8	01/08/2015		
				DO = 5.4	01/10/2015		
6	**Andhiarkore**	DO = 4.1	01/03/2016	BOD = 7.2	01/06/2015	pH=8.6	01/01/2016
				DO = 4.9	01/08/2015		
7	**Ghatora**			DO = 5.4	01/08/2015	BOD = 2.7	01/01/2016
				DO = 3.8	01/07/2015	BOD = 2.8	2/1/2016
				DO = 5.6	01/09/2015	DO = 5.5	01/11/2015
				DO = 5.8	01/10/2015	DO = 4.5	01/12/2015
						DO = 5.7	01/01/2016
						DO = 5.9	2/1/2016
8	**Jondhra**	DO = 5.6	01/04/2016	DO = 5.3	01/08/2015		
9	**Rampur**			DO = 4.6	01/06/2015		
10	**Bamnidhi**			DO = 5.6	01/10/2015		
11	**Salebhata**	DO = 5.9	01/04/2016	DO = 5.8	01/09/2015		
12	**Kesinga**	BOD = 4.9	01/03/2016				
		BOD = 2.7	01/05/2016				
		DO = 5.7	01/05/2016				
13	**Kantamal**	DO = 5.7	01/05/2016				
14	**Tikarpara**			DO = 5.2	01/06/2015		
				DO = 5.6	01/07/2015		

Source: Water Quality Data Book (June 2015 to May 2016) Mahanadi Basin.

Parameters Description:

1 pH is pH_GEN(pH) units)
2 BOD is BOD3-27(mg/L)
3 DO is DO (mg/L)
4 Tcol-MPN is Tcol-MPN (MPN-100ml)

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

II	Basin : Subernarekha & Burhabalang				Complete		
Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Muri**	pH = 8.9	01/03/2016	BOD = 2.4	8/1/2015	pH = 9.3	2/1/2016
		pH = 8.8	01/04/2016	DO = 5.8	01/06/2015	BOD = 2.6	01/12/2015
		DO = 5.4	02/05/2016	DO = 4.6	8/1/2015		
2	**Adityapur**	pH = 8.6	02/05/2016	BOD = 60.0	01/06/2015	DO = 5.8	01/12/2015
		BOD = 119.0	01/03/2016	DO = 0.6	01/06/2015	DO = 2.0	01/01/2016
		DO = 1.2	01/03/2016	DO = 4.2	01/07/2015		
				DO = 5.8	01/09/2015		
3	**Jamshedpur**	BOD = 79.0	01/03/2016	BOD = 40.0	01/07/2015	DO = 5.0	01/12/2015
		BOD = 40.0	02/05/2016	DO = 2.8	01/06/2015	DO = 3.8	01/01/2016
		DO = 0.8	3/1/2016	DO = 1.8	01/07/2015		
		DO = 1.0	4/1/2016	DO = 3.6	01/09/2015		
		DO = 3.6	02/05/2016				
4	**Ghatshila**	DO = 4.8	4/1/2016	DO = 5.4	01/06/2015	pH = 8.6	2/1/2016
		DO = 5.0	02/05/2016	DO = 4.4	01/07/2015		
				DO = 5.0	01/09/2015		
5	**Jamsholaghat**			DO = 5.8	01/07/2015	pH = 8.6	2/1/2016
6	**Ghatshila Road Bridge**	DO = 4.2	3/1/2016	DO = 5.6	01/06/2015	pH = 8.6	2/1/2016
		DO = 5.0	02/05/2016	DO = 4.8	01/07/2015		
				DO = 3.8	01/08/2015		
				DO = 4.8	01/10/2015		
7	**Baridhi - Nala**	BOD = 60.0	3/1/2016	BOD = 20.0	01/06/2015	BOD = 2.2	2/1/2016
		DO = 1.0	3/1/2016	BOD = 4.0	01/08/2015	DO = 4.6	02/11/2015
		DO = 3.0	4/1/2016	BOD = 40.0	01/10/2015	DO = 3.4	01/12/2015
		DO = 4.4	02/05/2016	DO = 0.4	01/06/2015	DO = 4.8	2/1/2016
				DO = 2.6	01/07/2015		
				DO = 3.0	01/09/2015		
				DO = 1.2	01/10/2015		
8	**Kulpatanga**	pH = 8.8	3/1/2016			pH = 8.9	2/1/2016
		BOD = 80.0	02/05/2016				
		DO = 5.0	3/1/2016				
		DO = 4.6	4/1/2016				
		DO = 1.4	02/05/2016				

Source: Water Quality Data Book (June 2015 to May 2016) Subernarekha, Baitarani & Burhabalang.

Parameters Description:

1 pH is pH_GEN(pH) units)
2 BOD is BOD3-27(mg/L)
3 DO is DO (mg/L)
4 Tcol-MPN is Tcol-MPN (MPN-100ml)

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

III Basin : Brahmani & Baitarani

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Tilga**			DO = 5.8 DO = 4.8	01/06/2015 01/10/2015		
2	**Panposh**	DO = 3.2 DO = 4.8 DO = 5.4	3/1/2016 4/1/2016 02/05/2016	BOD = 3.4 DO = 4.4 DO = 5.6 DO = 5.2 DO = 5.4	01/06/2015 01/06/2015 01/07/2015 01/09/2015 01/10/2015		
3	**Gomlai**	DO = 5.6	3/1/2016	DO = 5.6	01/07/2015		
4	**Jenapur**					DO = 5.8	2/1/2016
5	**Talcher**					BOD = 2.2 BOD = 2.8	01/01/2016 01/02/2016
6	**Nandira**	DO = 4.6	02/05/2016	DO = 5.8	01/06/2015	BOD = 2.4 BOD = 2.6	01/12/2015 2/1/2016
7	**Kamalanaga**	DO = 5.6 DO = 5.6	3/1/2016 4/1/2016	DO = 5.6	01/07/2015	BOD = 2.2 DO = 4.6	01/01/2016 01/02/2016
8	**RSP Nalla**	pH = 5.6 BOD = 79.0 DO = 2.0 DO = 2.8 Do = 4.6	4/1/2016 3/1/2016 3/1/2016 4/1/2016 02/05/2016	BOD = 40.0 BOD =2.8 DO = 1.4 DO = 4.4 DO = 5.6 DO = 5.0 DO = 5.8	01/06/2015 01/08/2015 01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	DO = 2.8 DO = 5.8	01/11/2015 01/12/2015
9	**Anandpur**			DO = 4.4	01/06/2015	BOD = 2.8 DO = 4.4	01/01/2016 01/01/2016

Source: Water Quality Data Book (June 2015 to May 2016) Brahamani Basin.

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

IV Basin : Godavari

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Polavaram**	pH = 8.7 Tcol-MPN= 1400 Tcol-MPN= 16000 Tcol-MPN= 16000	4/1/2016 3/1/2016 4/1/2016 02/05/2016	BOD = 2.2 Tcol-MPN= 230 Tcol-MPN= 9000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000	8/1/2015 01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	pH = 8.8 Tcol-MPN= 5000 Tcol-MPN= 2800 Tcol-MPN= 16000 Tcol-MPN= 16000	2/1/2016 01/11/2015 01/12/2015 01/01/2016 01/02/2016
2	**Bhadrachalam**	pH = 8.7 pH = 8.8 Tcol-MPN= 2800 Tcol-MPN= 16000 Tcol-MPN= 16000	3/1/2016 4/2/2016 3/1/2016 4/1/2016 02/05/2016	Tcol-MPN= 3500 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000	01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	pH = 8.7 Tcol-MPN= 5000 Tcol-MPN= 9000 Tcol-MPN= 9000	2/1/2016 02/11/2015 01/12/2015 01/01/2016
3	**Konta**	DO = 5.9 DO = 5.6 Tcol-MPN= 1700 Tcol-MPN= 1700 Tcol-MPN= 16000	4/1/2016 02/05/2016 3/1/2016 4/1/2016 02/05/2016	Tcol-MPN= 1400 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 9000	01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	pH = 8.7 DO = 5.8 Tcol-MPN= 3000 Tcol-MPN= 9000 Tcol-MPN= 2800 Tcol-MPN= 5000	2/1/2016 2/1/2016 02/11/2015 01/12/2015 01/01/2016 2/1/2016
4	**Sangam**	DO = 5.0 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000	5/2/2016 3/1/2016 4/1/2016 02/05/2016	Tcol-MPN= 1700 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000	01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	pH = 8.7 Tcol-MPN= 5000 Tcol-MPN= 9000 Tcol-MPN= 16000 Tcol-MPN= 9000	2/1/2016 02/11/2015 01/12/2015 01/01/2016 2/1/2016
5	**Perur**	pH = 8.6 DO = 5.2 Tcol-MPN= 1700 Tcol-MPN= 16000 Tcol-MPN= 9000	4/1/2016 5/2/2016 3/1/2016 4/1/2016 02/05/2016	Tcol-MPN= 170 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 9000	01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	pH = 8.6 BOD= 2.7 DO = 4.9 Tcol-MPN= 80 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 3000	2/1/2016 2/1/2016 2/1/2016 02/11/2015 01/12/2015 01/01/2016 2/1/2016
6	**Pathagudem**	pH = 8.7 DO = 4.0 Tcol-MPN= 1700 Tcol-MPN= 3000 Tcol-MPN= 16000	4/1/2016 3/1/2016 3/1/2016 4/1/2016 02/05/2016	Tcol-MPN= 330 Tcol-MPN= 1300 Tcol-MPN= 16000 Tcol-MPN= 1700	01/06/2015 01/07/2015 01/09/2015 01/10/2015	pH = 8.7 Tcol-MPN= 3500 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 9000	01/02/2016 03/11/2015 01/12/2015 01/01/2016 2/1/2016
7	**Jagdalpur**			BOD = 2.5 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 2200	01/10/2015 01/07/2015 01/09/2015 01/10/2015		
8	**Nowrangpur**	Tcol-MPN= 16000 Tcol-MPN= 2800 Tcol-MPN= 16000	3/1/2016 4/1/2016 02/05/2016	Tcol-MPN= 220 Tcol-MPN= 16000 Tcol-MPN= 1300 Tcol-MPN= 9000	01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	pH = 8.6 Tcol-MPN= 9000 Tcol-MPN= 5000 Tcol-MPN= 16000 Tcol-MPN= 1700	01/02/2016 03/11/2015 01/12/2015 01/01/2016 2/1/2016

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Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

IV	Basin : Godavari						
Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
9	**Tekra**	BOD = 2.3 BOD = 3.0	01/04/2016 01/05/2016	pH = 8.7 DO = 5.7 Tcol-MPN= 140 Tcol-MPN= 140 Tcol-MPN= 260 Tcol-MPN= 2200 Tcol-MPN= 80	01/06/2015 01/07/2015 01/06/2015 01/07/2015 03/08/2015 01/09/2015 05/10/2015	BOD = 2.2 DO = 5.8	01/12/2015 01/12/2015
10	**Bhatpalli**	Tcol-MPN= 130 Tcol-MPN= 330 Tcol-MPN= 170	3/1/2016 01/04/2016 01/05/2016	pH = 8.8 BOD = 20.0 BOD =2.9 BOD = 2.6 DO = 5.1 Tcol-MPN= 170 Tcol-MPN= 270 Tcol-MPN= 130 Tcol-MPN= 9000 Tcol-MPN= 3000	01/06/2015 01/06/2015 03/08/2015 05/10/2015 01/06/2015 01/06/2015 01/07/2015 03/08/2015 01/09/2015 05/10/2015	pH = 8.6 BOD = 2.2 BOD = 2.1 BOD = 20.0 DO = 5.0 Tcol-MPN= 5000 Tcol-MPN= 1700 Tcol-MPN= 260 Tcol-MPN= 340	02/11/2015 01/12/2015 01/01/2016 2/1/2016 01/02/2016 02/11/2015 01/12/2015 01/01/2016 2/1/2016
11	**Bamni**	BOD = 45.0 BOD = 4.2 BOD = 10.0 Tcol-MPN= 270 Tcol-MPN= 260 Tcol-MPN= 300	3/1/2016 01/04/2016 01/05/2016 3/1/2016 01/04/2016 01/05/2016	pH = 8.7 BOD = 35.0 BOD = 2.5 BOD = 15.0 BOD = 3.1 DO = 4.3 DO = 4.5 DO = 5.0 Tcol-MPN= 2800 Tcol-MPN= 80 Tcol-MPN= 80 Tcol-MPN= 1300 Tcol-MPN= 1300	01/06/2015 01/06/2015 01/07/2015 03/08/2015 01/09/2015 01/06/2015 03/08/2015 01/10/2015 01/06/2015 01/07/2015 03/08/2015 01/09/2015 05/10/2015	BOD = 15.0 BOD = 3.8 DO = 4.3 Tcol-MPN= 800 Tcol-MPN= 220 Tcol-MPN= 1700 Tcol-MPN= 1100	01/11/2015 01/12/2015 01/11/2015 02/11/2015 01/12/2015 01/01/2016 2/1/2016
12	**P.G.Bridge**	pH = 8.6 BOD = 2.3 DO = 5.9	3/1/2016 01/03/2016 01/03/2016	pH = 8.9 BOD = 50.0 BOD = 2.8 BOD = 3.3 BOD = 2.6 DO = 5.2 Tcol-MPN= 110 Tcol-MPN= 110 Tcol-MPN= 70 Tcol-MPN= 800 Tcol-MPN= 270	01/06/2015 01/06/2015 03/08/2015 01/09/2015 01/10/2015 01/06/2015 01/06/2015 01/07/2015 03/08/2015 01/09/2015 05/10/2015	pH = 8.8 BOD = 2.3 Tcol-MPN= 500 Tcol-MPN= 800 Tcol-MPN= 700 Tcol-MPN= 1100	01/01/2016 01/01/2016 02/11/2015 01/12/2015 01/01/2016 2/1/2016
13	**Nandgaon**	BOD = 20.0 DO = 4.2 DO = 5.8 Tcol-MPN= 220 Tcol-MPN= 130	3/1/2016 3/1/2016 01/04/2016 3/1/2016 01/04/2016	BOD = 20.0 BOD = 10.0 BOD = 2.4 DO = 5.9 DO = 5.2 DO = 3.6 Tcol-MPN= 220 Tcol-MPN= 270 Tcol-MPN= 5000 Tcol-MPN= 16000	01/08/2015 01/09/2015 10/1/2015 7/1/2015 8/3/2015 9/1/2015 01/07/2015 03/08/2015 01/09/2015 05/10/2015	Tcol-MPN= 2800 Tcol-MPN= 2200 Tcol-MPN= 330 Tcol-MPN= 1700	02/11/2015 01/12/2015 01/01/2016 2/1/2016

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Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

IV	Basin : Godavari						
Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
14	**Hivra**	BOD = 15.0	01/03/2016	pH = 8.8	01/06/2015	pH = 8.7	02/11/2015
		BOD = 2.8	4/1/2016	pH = 8.6	7/1/2015	Tcol-MPN= 500	02/11/2015
		DO = 4.5	01/03/2016	BOD = 2.2	01/06/2015	Tcol-MPN= 170	01/12/2015
		DO = 5.9	4/1/2016	BOD = 3.0	9/1/2015	Tcol-MPN= 170	01/01/2016
		Tcol-MPN= 130	01/03/2016	DO = 5.6	01/06/2015	Tcol-MPN= 140	2/1/2016
		Tcol-MPN= 170	4/1/2016	DO = 5.9	7/1/2015		
				Tcol-MPN= 90	01/06/2015		
				Tcol-MPN= 80	01/07/2015		
				Tcol-MPN= 260	03/08/2015		
				Tcol-MPN= 16000	01/09/2015		
				Tcol-MPN= 1300	05/10/2015		
15	**Asthi**	pH = 8.7	3/1/2016	pH = 8.6	01/06/2015	pH = 8.7	1/1/2016
		pH = 9.0	4/1/2016	BOD = 2.2	6/1/2015	pH = 8.8	2/1/2016
		pH = 9.0	4/1/2016	BOD = 4.5	01/07/2015	Tcol-MPN= 130	02/11/2015
		BOD = 3.0	06/04/2016	Tcol-MPN= 2800	01/06/2015	Tcol-MPN= 80	01/12/2015
		BOD = 3.4	02/05/2016	Tcol-MPN= 220	01/07/2015	Tcol-MPN= 130	01/01/2016
		Tcol-MPN= 170	01/03/2016	Tcol-MPN= 800	03/08/2015	Tcol-MPN= 300	2/1/2016
		Tcol-MPN= 170	4/1/2016	Tcol-MPN= 2200	01/09/2015		
				Tcol-MPN= 2200	05/10/2015		
16	**Pauni**	BOD = 15.0	3/1/2016	BOD = 2.7	01/06/2015	BOD = 3.0	01/01/2016
		BOD = 3.6	4/1/2016	BOD = 2.1	01/07/2015	BOD = 2.5	2/1/2016
		BOD = 3.2	02/05/2016	BOD = 4.4	8/3/2015	Tcol-MPN= 16000	02/11/2015
		DO = 5.1	3/1/2016	Tcol-MPN= 170	01/06/2015	Tcol-MPN= 16000	01/12/2015
		Tcol-MPN= 1400	01/03/2016	Tcol-MPN= 330	01/07/2015	Tcol-MPN= 2800	01/01/2016
		Tcol-MPN= 260	4/1/2016	Tcol-MPN= 900	03/08/2015	Tcol-MPN= 700	2/1/2016
		Tcol-MPN= 16000	02/05/2016	Tcol-MPN= 2200	01/09/2015		
				Tcol-MPN= 2400	05/10/2015		
17	**Satrapur**	BOD = 3.0	4/1/2016	BOD = 4.5	01/07/2015	pH = 8.6	02/11/2015
		BOD = 15.0	01/05/2016	BOD = 4.7	8/3/2015	BOD = 2.7	02/11/2015
		DO = 4.8	01/05/2016	BOD = 3.2	10/5/2015	BOD = 3.6	01/12/2015
		Tcol-MPN= 5000	01/03/2016	Tcol-MPN= 500	01/06/2015	BOD = 2.5	01/01/2016
		Tcol-MPN= 260	4/1/2016	Tcol-MPN= 2200	01/07/2015	BOD = 2.3	02/02/2016
		Tcol-MPN= 330	02/05/2016	Tcol-MPN= 3000	03/08/2015	Tcol-MPN= 1300	02/11/2015
				Tcol-MPN= 16000	01/09/2015	Tcol-MPN= 800	01/12/2015
				Tcol-MPN= 3000	05/10/2015	Tcol-MPN= 220	01/01/2016
						Tcol-MPN= 260	2/1/2016
18	**Rajegaon**	BOD = 15.0	01/03/2016	BOD = 2.1	9/1/2015	Tcol-MPN= 1100	02/11/2015
		DO = 4.8	01/03/2016	Tcol-MPN= 220	01/07/2015	Tcol-MPN= 700	01/12/2015
		Tcol-MPN= 800	01/03/2016	Tcol-MPN= 1400	01/08/2015	Tcol-MPN= 500	01/01/2016
				Tcol-MPN= 800	01/09/2015	Tcol-MPN= 220	2/1/2016
				Tcol-MPN= 800	05/10/2015		
19	**Kumhari**	Tcol-MPN= 260	01/03/2016	BOD = 2.6	01/06/2015	Tcol-MPN= 170	02/11/2015
		Tcol-MPN= 270	4/1/2016	DO = 5.3	8/3/2015	Tcol-MPN= 130	01/12/2015
		Tcol-MPN= 170	02/05/2016	Tcol-MPN= 220	01/06/2015	Tcol-MPN= 170	01/01/2016
				Tcol-MPN= 800	01/07/2015	Tcol-MPN= 1100	2/1/2016
				Tcol-MPN= 800	03/08/2015		
				Tcol-MPN= 1700	01/09/2015		
				Tcol-MPN= 500	05/10/2015		

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Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

IV Basin : Godavari

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
20	**Sakmur**	BOD = 55.0 DO = 4.3 Tcol-MPN= 500 Tcol-MPN= 90	01/03/2016 01/03/2016 01/03/2016 4/1/2016	pH = 8.6 BOD = 30.0 BOD = 3.3 BOD = 30.0 DO = 4.2 DO = 5.7 DO = 4.7 Tcol-MPN= 110 Tcol-MPN= 170 Tcol-MPN= 900 Tcol-MPN= 130	01/06/2015 01/06/2015 8/3/2015 10/5/2015 01/06/2015 01/07/2015 10/5/2015 01/07/2015 03/08/2015 01/09/2015 05/10/2015	DO = 5.5 DO = 5.7 Tcol-MPN= 170 Tcol-MPN= 80 Tcol-MPN= 330 Tcol-MPN= 500	01/12/2015 01/01/2016 02/11/2015 01/12/2015 01/01/2016 2/1/2016
21	**Wairagarh**			BOD = 2.1 DO = 5.9 Tcol-MPN= 270 Tcol-MPN= 90 Tcol-MPN= 900 Tcol-MPN= 16000	10/5/2015 01/07/2015 01/07/2015 03/08/2015 01/09/2015 05/10/2015	BOD = 3.9 Tcol-MPN= 1400	01/12/2015 02/11/2015
22	**Ramakona**	BOD = 3.5 BOD = 5.4 Tcol-MPN= 170	3/1/2016 4/1/2016 4/1/2016	BOD = 10.0 BOD = 3.0 DO = 4.5 Tcol-MPN= 220 Tcol-MPN= 16000 Tcol-MPN= 800	8/3/2015 10/5/2015 8/3/2015 01/07/2015 01/09/2015 05/10/2015	BOD = 6.5 Tcol-MPN= 230 Tcol-MPN= 80 Tcol-MPN= 700 Tcol-MPN= 220	02/11/2015 02/11/2015 01/12/2015 01/01/2016 2/1/2016
23	**Keolari**	BOD = 30.0 BOD = 2.6 DO = 7.1 Tcol-MPN= 170 Tcol-MPN= 220 Tcol-MPN= 5000	3/1/2016 01/05/2016 3/1/2016 01/03/2016 4/1/2016 02/05/2016	BOD = 2.6 BOD = 2.4 BOD = 2.8 DO = 6.5 DO = 8.9 Tcol-MPN= 330 Tcol-MPN= 130 Tcol-MPN= 1300 Tcol-MPN= 16000	01/07/2015 8/3/2015 10/5/2015 01/09/2015 10/5/2015 01/07/2015 03/08/2015 01/09/2015 05/10/2015	DO = 8.9 DO = 7.0 DO = 6.1 DO = 7.1 Tcol-MPN= 500 Tcol-MPN= 220 Tcol-MPN= 1700 Tcol-MPN= 300	02/11/2015 01/12/2015 01/01/2016 02/02/2016 02/11/2015 01/12/2015 01/01/2016 2/1/2016
24	**Mancheria**	BOD = 2.1 Tcol-MPN= 16000 Tcol-MPN= 2200	3/1/2016 01/03/2016 4/1/2016	Tcol-MPN= 9000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 1400	01/07/2015 03/08/2015 01/09/2015 05/10/2015	pH = 8.6 Tcol-MPN= 9000 Tcol-MPN= 16000 Tcol-MPN= 9000 Tcol-MPN= 2200	02/11/2015 02/11/2015 01/12/2015 01/01/2016 2/1/2016
25	**Kopergan gauge, Rainfal, W/L**			Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000	24/07/2015 01/08/2015 19/09/2015	Tcol-MPN= 16000	03/11/2015
26	**Pachegaon**					Tcol-MPN= 16000 Tcol-MPN= 16000	03/11/2015 02/12/2015

Source: Water Quality Data Book (June 2015 to May 2016) Godavari Basin.

Parameters Description:

1 pH is pH_GEN(pH) units)
2 BOD is BOD3-27(mg/L)
3 DO is DO (mg/L)
4 Tcol-MPN is Tcol-MPN (MPN-100ml)

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

V Basin : Krishna

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Keesara**			BOD = 4.1	01/07/2015	DO = 4.2	02/11/2015
				BOD = 2.2	01/09/2015	DO = 4.8	01/12/2015
				DO = 4.3	01/07/2015	Tcol-MPN= 16000	02/11/2015
				DO = 5.7	01/08/2015	Tcol-MPN= 9000	01/12/2015
				DO = 4.4	01/09/2015		
				Tcol-MPN= 16000	01/07/2015		
				Tcol-MPN= 2800	01/08/2015		
				Tcol-MPN= 16000	01/09/2015		
				Tcol-MPN= 16000	01/10/2015		
2	**Madhira**			BOD = 3.1	01/09/2015	DO = 5.5	02/11/2015
				DO = 3.0	01/07/2015	DO = 5.5	01/12/2015
				DO = 5.4	01/08/2015	Tcol-MPN= 16000	02/11/2015
				DO = 4.4	01/09/2015	Tcol-MPN= 9000	01/12/2015
				Tcol-MPN= 16000	01/07/2015		
				Tcol-MPN= 16000	01/08/2015		
				Tcol-MPN= 16000	01/09/2015		
				Tcol-MPN= 3500	01/10/2015		
3	**Paleru Bridge**			DO = 3.0	01/06/2015		
				DO = 2.8	01/07/2015		
				DO = 2.4	01/09/2015		
				Tcol-MPN=220	01/06/2015		
				Tcol-MPN= 2800	01/07/2015		
				Tcol-MPN= 16000	01/09/2015		
4	**Wadenapally**	Tcol-MPN= 16000	3/1/2016	DO = 5.1	01/06/2015	Tcol-MPN= 16000	02/11/2015
		Tcol-MPN= 16000	4/1/2016	DO = 4.8	01/07/2015	Tcol-MPN= 2800	01/12/2015
		Tcol-MPN= 16000	01/05/2016	DO = 5.4	01/08/2015	Tcol-MPN= 9000	01/01/2016
				Tcol-MPN=220	01/06/2015	Tcol-MPN= 16000	01/02/2016
				Tcol-MPN= 3500	01/07/2015		
				Tcol-MPN= 1400	01/08/2015		
				Tcol-MPN= 16000	01/09/2015		
				Tcol-MPN= 16000	01/10/2015		
5	**Dameracherla**			BOD = 3.1	01/06/2015	Tcol-MPN= 2400	02/11/2015
				DO = 5.2	01/07/2015	Tcol-MPN= 1100	01/12/2015
				DO = 5.9	01/09/2015		
				Tcol-MPN= 2800	01/06/2015		
				Tcol-MPN= 1600	01/07/2015		
				Tcol-MPN= 16000	01/09/2015		
6	**Halia**	Tcol-MPN=2200	4/1/2016	DO = 5.2	01/07/2015	Tcol-MPN= 16000	01/12/2015
		Tcol-MPN= 16000	01/05/2016	DO = 5.4	01/09/2015		
				Tcol-MPN= 16000	01/07/2015		
				Tcol-MPN= 16000	01/09/2015		
				Tcol-MPN= 16000	01/10/2015		
7	**Bawapuram**			BOD = 3.7	01/07/2015	pH = 8.6	01/01/2016
				BOD = 2.8	01/09/2015	pH = 8.7	01/02/2016
				DO = 4.2	01/06/2015	BOD = 2.7	02/11/2015
				DO = 4.9	01/07/2015	DO = 5.9	02/11/2015
				DO = 1.2	24/08/2015	Tcol-MPN= 16000	02/11/2015
				DO = 5.2	01/09/2015	Tcol-MPN= 16000	01/01/2016
				DO = 5.3	01/10/2015	Tcol-MPN= 16000	01/02/2016
				Tcol-MPN= 1300	01/06/2015		
				Tcol-MPN= 3500	01/07/2015		
				Tcol-MPN= 170	24/08/2015		
				Tcol-MPN= 9000	01/09/2015		
				Tcol-MPN= 16000	01/10/2015		

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Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

V Basin : Krishna

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
8	**Mantralayam**	Tcol-MPN= 9000	29/05/2016	BOD = 2.8	01/08/2015	pH = 8.6	01/01/2016
				BOD = 2.9	01/09/2015	pH = 8.7	01/02/2016
				DO = 5.1	01/06/2015	DO = 5.9	02/11/2015
				DO = 1.6	01/08/2015	Tcol-MPN= 5000	02/11/2015
				DO = 5.0	01/09/2015	Tcol-MPN= 9000	01/12/2015
				Tcol-MPN= 340	01/06/2015	Tcol-MPN= 16000	01/01/2016
				Tcol-MPN= 700	01/08/2015	Tcol-MPN= 3000	01/02/2016
				Tcol-MPN= 16000	01/09/2015		
				Tcol-MPN= 16000	01/10/2015		
9	**T.Ramapuram**	Tcol-MPN= 2200	29/05/2016	BOD = 2.8	01/09/2015	pH = 8.6	01/02/2016
				DO = 5.0	01/06/2015	BOD = 2.3	01/01/2016
				DO = 5.0	20/08/2015	DO = 5.9	02/11/2015
				DO = 5.9	01/09/2015	Tcol-MPN= 16000	02/11/2015
				DO = 5.9	01/10/2015	Tcol-MPN= 16000	01/12/2015
				Tcol-MPN= 340	01/06/2015	Tcol-MPN= 16000	01/01/2016
				Tcol-MPN= 16000	20/08/2015	Tcol-MPN= 16000	01/02/2016
				Tcol-MPN= 16000	01/09/2015		
				Tcol-MPN= 16000	01/10/2015		
10	**Haralahalli**			DO = 4.7	01/07/2015		
				DO = 5.0	01/09/2015		
				DO = 5.6	02/11/2015		
11	**Kuppelur**			DO = 4.9	01/07/2015		
				DO = 5.9	01/08/2015		
				DO = 4.8	01/09/2015		
				DO = 3.8	01/10/2015		
12	**Honnali**	DO = 5.4	3/1/2016	DO = 5.7	01/07/2015	BOD = 5.8	02/11/2015
		DO = 5.0	02/05/2016	DO = 5.4	01/09/2015	BOD = 2.2	01/01/2016
13	**Simoga**	pH = 6.3	02/05/2016	DO = 5.3	01/07/2015	DO = 5.6	02/11/2015
		BOD = 21.7	02/05/2016	DO = 4.3	01/09/2015	DO = 1.4	01/03/2016
		DO = 0.6	02/05/2016				
14	**Holehonnur**	DO = 5.8	3/1/2016	DO = 5.3	01/06/2015	BOD = 2.8	01/02/2016
		DO = 5.6	4/1/2016	DO = 4.9	01/07/2015	DO = 5.8	02/11/2015
		DO = 5.6	01/05/2016	DO = 4.7	01/08/2015		
				DO = 5.0	01/09/2015		
				DO = 3.6	05/10/2015		
15	**Yadgir**			BOD = 2.4	01/08/2015	DO = 4.9	02/11/2015
				BOD = 2.4	01/09/2015	Tcol-MPN= 16000	02/11/2015
				BOD = 2.7	01/10/2015		
				DO = 3.5	01/08/2015		
				DO = 5.0	01/09/2015		
				DO = 5.8	01/10/2015		
				Tcol-MPN= 300	01/08/2015		
				Tcol-MPN= 16000	01/09/2015		
				Tcol-MPN= 16000	01/10/2015		

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Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

V Basin : Krishna

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
16	**Malkhed**	Tcol-MPN= 16000 Tcol-MPN= 1700 Tcol-MPN= 16000	3/1/2016 4/1/2016 02/05/2016	DO = 5.1 DO = 4.8 DO = 5.8 DO = 5.6 Tcol-MPN= 800 Tcol-MPN= 2800 Tcol-MPN= 3500 Tcol-MPN= 16000 Tcol-MPN= 16000	01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	DO = 5.6 DO = 5.6 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000	02/11/2015 01/12/2015 02/11/2015 01/12/2015 1/1/2016 01/02/2016
17	**Huvinhedigi**	Tcol-MPN= 170 Tcol-MPN= 16000	3/1/2016 02/05/2016	DO = 4.7 DO = 4.8 DO = 5.8 DO = 5.5 Tcol-MPN= 270 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000	01/06/2015 01/07/2015 01/09/2015 01/10/2015 01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	DO = 5.9 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 16000 Tcol-MPN= 220	02/11/2015 02/11/2015 01/12/2015 1/1/2016 15/02/2016
18	**Gokak Falls (Seasonal)**			BOD = 2.3 Tcol-MPN= 3300 Tcol-MPN= 450 Tcol-MPN= 400	01/09/2015 02/07/2015 03/08/2015 01/09/2015		
19	**Kurundwad**			DO = 5.9 Tcol-MPN= 40000 Tcol-MPN= 23000 Tcol-MPN= 7900 Tcol-MPN= 4900	01/09/2015 02/07/2015 03/08/2015 01/09/2015 05/10/2015		
20	**Arjunwad (Seasonal)**			DO = 4.2 DO = 4.0 Tcol-MPN= 7900 Tcol-MPN= 2100 Tcol-MPN= 17000 Tcol-MPN= 24000	01/07/2015 05/10/2015 02/07/2015 03/08/2015 01/09/2015 05/10/2015		
21	**Samdoli (Seasonal)**			DO = 4.8 DO = 4.7 DO = 5.8 Tcol-MPN= 4900 Tcol-MPN= 4000 Tcol-MPN= 17000 Tcol-MPN= 7000	02/07/2015 03/08/2015 01/09/2015 02/07/2015 03/08/2015 01/09/2015 05/10/2015		
22	**Karad**			Tcol-MPN= 2200	04/08/2015		
23	**Warunji**			DO = 5.9 Tcol-MPN= 11000	04/08/2015 04/08/2015		

Source: Water Quality Data Book (June 2015 to May 2016) Krishna Basin.

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

VI Basin : Cauvery

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Gopurajapuram**					BOD = 2.2	11/2/2015
2	**Nallathur**			BOD = 2.6	01/06/2015		
3	**Menangudi**					BOD = 2.2	1/18/2016
	Porakudi					BOD = 2.6	11/9/2015
4	**Peralam**					BOD = 2.7	1/18/2016
5	**Thengudi**	DO = 5.1 DO = 4.6	3/1/2016 18/05/2016	BOD = 2.7 DO = 4.7	01/10/2015 01/10/2015	DO =4.9 DO = 4.7 DO = 5.0 DO = 4.7	11/2/2015 01/12/2015 1/4/2016
6	**Musiri**	pH = 8.7 BOD = 3.5	01/04/2016 01/08/2015	BOD = 2.4	01/09/2015	BOD = 3.2	2/1/2016
7	**Nallamaranpatty**			BOD = 3.7	01/10/2015	DO = 5.7	21/12/2015
8	**Elunuthimangalam**	pH = 8.9 BOD = 3.7 DO = 3.7	3/1/2016 3/1/2016 3/1/2016	pH = 8.9 BOD = 4.1 BOD = 2.7 BOD = 5.7 BOD = 5.1 BOD = 3.7 DO = 5.1 DO = 5.1 DO = 3.7	01/09/2015 01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015 01/06/2015 01/09/2015 01/10/2015	BOD = 4.4 BOD = 2.3 BOD = 3.9 DO = 5.4	11/2/2015 1/1/2016 2/1/2016 2/1/2016
9	**Kodumudi**	BOD = 2.7 DO =5.8 DO =5.3	3/1/2016 3/1/2016 01/04/2016	BOD = 5.1 BOD = 2.7 BOD = 2.1 DO = 4.3 DO =5.9 DO =4.9	01/06/2015 01/07/2015 01/08/2015 01/08/2015 01/09/2015 01/10/2015	BOD = 2.7 BOD = 2.5 DO = 5.5 DO = 5.2	11/2/2015 01/12/2015 01/12/2015 2/1/2016
10	**Savandapur**			BOD = 4.1 DO = 3.8	01/07/2015 01/06/2015	BOD = 4.3	2/1/2016
11	**Thengumarahada**					BOD = 2.7	11/2/2015
12	**Gandhavayal**			pH = 8.8	01/10/2015		
13	**Nellithurai**			DO = 5.5	01/06/2015		
14	**Urachikottai**	BOD = 5.6 BOD = 5.3 BOD = 5.1	3/9/2016 01/04/2016 5/2/2016	BOD = 4.4 BOD = 4.5 BOD = 2.5 BOD = 2.2 BOD = 3.5	01/06/2015 04/07/2015 01/08/2015 01/09/2015 01/10/2015	BOD = 2.7 BOD = 5.1 BOD = 3.2	11/2/2015 1/1/2016 2/1/2016

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Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

VI Basin : Cauvery

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
15	**Billigundulu**			BOD = 5.7	01/07/2015	BOD = 2.6	1/1/2016
						BOD = 2.6	2/1/2016
16	**T.Bekuppe**	BOD = 10.2	3/1/2016	BOD = 11.8	01/08/2015	BOD = 10.3	11/2/2015
		BOD = 5.9	01/04/2016	BOD = 6.1	01/09/2015	BOD = 13.9	1/1/2016
		BOD = 7.7	5/1/2016	BOD = 9.0	05/10/2015	BOD = 5.9	2/1/2016
		DO = 1.8	3/1/2016	DO = 2.7	01/06/2015	DO = 3.9	1/1/2016
		DO = 2.7	01/04/2016	DO = 4.5	01/07/2015	DO = 3.8	2/1/2016
		DO = 4.6	5/1/2016	DO = 3.7	01/08/2015		
				DO = 3.0	01/09/2015		
				DO = 2.4	05/10/2015		
17	**T. K. Halli**			BOD = 4.0	01/06/2015	DO = 53	01/06/2015
				DO = 3.4	01/09/2015	DO = 4.2	11/2/2015
				DO = 5.1	05/10/2015	DO = 5.7	01/12/2015
18	**Kollegal**			DO = 5.5	01/08/2015	DO = 5.2	11/2/2015
				DO = 5.0	01/09/2015	DO = 5.5	01/12/2015
				DO = 4.9	05/10/2015		
19	**T. Narasipur**	DO = 5.6	3/1/2016	DO = 5.9	01/06/2015	DO = 4.8	11/2/2015
				DO = 5.5	01/07/2015	DO = 5.7	01/12/2015
				DO = 5.0	01/09/2015		
				DO = 5.3	05/10/2015		
20	**Muthankera**			DO = 5.6	01/08/2015		
21	**Akkihebbal**	DO = 4.1	01/04/2016	DO = 5.9	01/08/2015	DO = 5.8	11/2/2015
		DO = 2.0	5/1/2016	DO = 5.3	05/10/2015	DO = 5.9	01/12/2015
22	**M.H.Halli**	DO = 5.4	3/1/2016	DO = 3.2	01/09/2015	DO = 5.2	11/2/2015
						DO = 3.0	1/1/2016
23	**Sakaleshpur**	DO = 5.2	5/1/2016	BOD = 2.5	01/09/2015	BOD = 2.2	11/2/2015
				BOD = 2.3	05/10/2015	BOD = 2.6	1/1/2016
				DO = 5.8	01/09/2015	DO = 5.8	11/2/2015
				DO = 5.6	05/10/2015		
24	**Kudige**	DO = 5.4	3/1/2016	DO = 5.7	01/07/2015		
		DO = 5.0	5/1/2016				

Source: Water Quality Data Book (June 2015 to May 2016) Cauvery Basin.

Parameters Description:

1 pH is pH_GEN(pH) units)
2 BOD is BOD3-27(mg/L)
3 DO is DO (mg/L)
4 Tcol-MPN is Tcol-MPN (MPN-100ml)

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

VII Basin : Pennar

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Nellore**					BOD = 2.4 DO = 5.9 DO = 5.9	28/11/2015 11/12/2015 01/01/2016
2	**Nandipalli**			BOD = 2.4	21/08/2015	BOD = 5.6	28/11/2015
3	**Chennur**			BOD = 2.9 BOD = 2.6 BOD = 2.2	6/15/2015 21/08/2015 9/10/2015		
4	**Kamalapuram**			BOD = 2.7 BOD = 2.2 BOD = 2.4	21/08/2015 9/10/2015 10/5/2015	BOD = 2.4 BOD = 2.2	28/11/2015 11/12/2015
5	**Alladupalli**			BOD = 2.4 BOD = 2.6 DO = 5.6	21/08/2015 9/10/2015 01/07/2015	BOD = 2.4 DO = 5.9 DO = 5.1	28/11/2015 11/12/2015 01/01/2016

Source: Water Quality Data Book (June 2015 to May 2016) Pennar Basin

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

VIII Basin : East Flowing Rivers from Mahanadi to Pennar

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Marella**			DO = 3.6 DO = 5.8 Tcol-MPN= 16000 Tcol-MPN= 2800	01/07/2015 01/09/2015 01/07/2015 01/09/2015		

Source: Water Quality Data Book (June 2015 to May 2016) East Flowing Rivers from Mahanadi to Kanyakumari .

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

IX Basin : East Flowing Rivers from Pennar to Kanyakumari

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Sulurpet**					DO = 5.7	01/12/2015
2	**Chengalpet**	BOD = 2.4	24/05/2016				
3	**Arcot**					BOD = 2.4	02/01/2016
4	**Villupuram**					BOD = 2.7	11/19/2015
5	**Vazhavachanur**	BOD = 2.4	4/18/2016	DO = 5.0 DO = 4.4 DO = 4.3	6/5/2015 9/29/2015 10/1/2015	BOD = 2.2 BOD = 2.4	02/01/2016 01/02/2016
6	**Gummanur**	BOD = 4.5	01/03/2016	BOD = 5.5 BOD = 4.5 BOD = 3.5 BOD = 3.5 BOD = 2.4 BOD = 3.5	01/06/2015 01/07/2015 01/08/2015 10/1/2015 01/04/2016 5/2/2016	BOD = 2.5 BOD = 4.6 BOD = 3.4 BOD = 4.8	02/11/2015 01/12/2015 01/01/2016 01/02/2016
7	**Theni**	DO = 1.3	09/05/2016	DO = 4.6 DO = 4.6	01/06/2015 9/1/2015	BOD = 2.1 BOD = 2.1	11/2/2015 01/12/2015
8	**Ambasamudram**					BOD = 2.1	01/01/2016
9	**Murappanadu**	BOD = 2.5	01/04/2016	BOD = 3.3 DO = 5.6 DO = 5.7 DO = 5.5 DO = 5.2	01/06/2015 01/06/2015 01/08/2015 9/1/2015 10/1/2015	DO = 5.9 DO = 5.5 DO = 5.5	11/2/2015 01/12/2015 01/01/2016

Source: Water Quality Data Book (June 2015 to May 2016) East Flowing Rivers from Mahanadi to Kanyakumari .

Parameters Description:

1 pH is pH_GEN(pH) units)
2 BOD is BOD3-27(mg/L)
3 DO is DO (mg/L)
4 Tcol-MPN is Tcol-MPN (MPN-100ml)

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

X Basin : Narmada

Sl.No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Chandwada			Tcol-MPN= 400 Tcol-MPN= 500	01/08/2015 10/1/2015	Tcol-MPN= 1100	01/12/2015
2	Garudeshwar	BOD = 2.8 Tcol-MPN= 500	01/04/2016 01/04/2016	Tcol-MPN= 1000 Tcol-MPN= 800 Tcol-MPN= 700	01/06/2015 01/08/2015 10/1/2015	BOD = 2.2 Tcol-MPN= 1300 Tcol-MPN= 1000	01/02/2016 01/12/2015 01/02/2016
3	Pati	DO = 5.1 DO = 5.4 DO = 5.5	01/03/2016 01/04/2016 02/05/2016				
4	Dhulsar			DO = 4.5 DO = 5.0	01/07/2015 10/5/2015		
5	Mandleshwar	DO = 5.8	02/05/2016	DO = 5.6 DO = 5.4	01/06/2015 01/07/2015		
6	Kogaon			DO = 5.9 DO = 5.9	03/08/2015 9/1/2015		

contd...

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

X Basin : Narmada

Sl.No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
7	Handia	DO = 5.9	02/05/2016	DO = 4.9	01/06/2015		
8	Chhidgaon	DO = 3.5	02/05/2016	BOD = 3.4 DO = 3.4 DO = 4.9 DO = 5.6 DO = 5.8	01/06/2015 01/06/2015 01/07/2015 9/1/2015 10/5/2015	DO = 6.5	01/02/2016
9	Hoshangabad	DO = 4.1	02/05/2016	DO = 5.9 DO = 5.7 DO = 5.3 DO = 4.7	01/06/2015 01/07/2015 9/1/2015 10/5/2015	DO = 4.9	01/02/2016
10	Sandia	DO = 5.0	02/05/2016	DO = 5.8 DO = 5.5	01/06/2015 9/1/2015		
11	Gadarwara	BOD = 3.0	01/03/2016				
12	Barman	DO = 5.7 DO = 4.4	01/04/2016 02/05/2016	BOD = 2.1 DO = 4.1 DO = 5.9	01/06/2015 01/06/2015 01/07/2015	BOD = 4.2 DO = 4.4	11/2/2015 11/2/2015
13	Belkheri	DO = 4.3	01/04/2016 02/05/2016	DO = 5.2 DO = 5.1 DO = 5.7	01/06/2015 01/07/2015 9/1/2015	DO = 5.8	11/2/2015
14	Patan	DO = 4.6	01/04/2016	DO = 4.4 DO = 4.2 DO = 5.4 DO = 5.5	01/06/2015 01/07/2015 03/08/2015 10/5/2015	DO = 5.2 DO = 3.5	11/2/2015 01/02/2016
15	Bamni	BOD = 2.2 BOD = 2.7 DO = 3.6	01/03/2016 02/05/2016 02/05/2016	DO = 5.9	9/1/2015		
16	Mohgoan	DO = 4.9 DO = 4.4	01/04/2016 02/05/2016	DO = 4.7	01/06/2015		
17	Manot	DO = 5.9 DO = 5.3	01/04/2016 02/05/2016	DO = 5.7 DO = 5.7	01/06/2015 01/07/2015		
18	Dindori	BOD = 3.5	02/05/2016	DO = 2.9 DO = 5.0 DO = 5.7 DO = 5.0	01/06/2015 01/07/2015 03/08/2015 9/1/2015	BOD = 2.1 DO = 5.6 DO = 5.0 DO = 4.8 DO = 5.9	01/01/2016 11/2/2015 01/12/2015 01/01/2016 01/02/2016

Source: Water Quality Data Book (June 2015 to May 2016) Narmada Basin.

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

XI Basin : Tapi

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Burhanpur**	BOD = 2.5	01/04/2016	Tcol-MPN= 1500	01/06/2015	BOD = 2.6	01/02/2016
		BOD = 3.2	02/05/2016	Tcol-MPN= 700	01/07/2015	Tcol-MPN= 1000	02/11/2015
		DO = 4.6	01/03/2016	Tcol-MPN= 1200	01/08/2015	Tcol-MPN= 2000	01/12/2015
		Tcol-MPN= 800	01/03/2016	Tcol-MPN= 700	01/09/2015	Tcol-MPN= 1200	01/01/2016
		Tcol-MPN= 6000	01/04/2016		01/10/2015	Tcol-MPN= 2400	01/02/2016
		Tcol-MPN= 2600	02/05/2016				
2	**Gopalkheda**	pH = 290	01/04/2016	pH = 180	01/06/2015	pH = 290	01/02/2016
		BOD = 500	01/04/2016	pH = 300	01/08/2015	BOD = 800	01/02/2016
		Tcol-MPN= 80	01/04/2016	pH = 340	01/10/2015	Tcol-MPN= 80	01/02/2016
				BOD = 300	01/06/2015		
				BOD = 400	01/08/2015		
				BOD = 700	01/10/2015		
				Tcol-MPN= 80	01/06/2015		
				Tcol-MPN= 80	01/08/2015		
				Tcol-MPN= 125	01/10/2015		
3	**Sarangkheda**	BOD = 1.0	01/04/2016	BOD = 2.1	01/06/2015	BOD = 3.9	01/02/2016
		Tcol-MPN= 500	01/04/2016	BOD = 2.6	01/10/2015	Tcol-MPN= 1800	01/12/2015
				Tcol-MPN= 1800	01/06/2015	Tcol-MPN= 4000	01/02/2016
				Tcol-MPN= 1400	01/10/2015		
4	**Mahuwa**	Tcol-MPN= 3400	01/04/2016	Tcol-MPN= 800	01/06/2015	Tcol-MPN= 3600	01/12/2015
				Tcol-MPN= 800	01/08/2015	Tcol-MPN= 2000	01/02/2016
				Tcol-MPN= 2200	01/10/2015		
5	**Pingalwada**	BOD = 4.3	01/03/2016	BOD = 3.0	01/06/2015	BOD = 2.6	02/11/2015
		BOD = 3.9	01/04/2016	BOD = 5.3	01/07/2015	BOD = 2.9	01/12/2015
		DO = 2.0	01/03/2016	DO = 0.0	01/06/2015	BOD = 2.5	01/01/2016
		Tcol-MPN= 1000	01/03/2016	DO = 3.2	01/07/2015	DO = 3.5	02/11/2015
		Tcol-MPN= 3200	01/04/2016	DO = 1.0	01/09/2015	DO = 0.0	01/12/2015
		Tcol-MPN= 700	02/05/2016	Tcol-MPN= 3000	01/06/2015	Tcol-MPN= 2000	02/11/2015
				Tcol-MPN= 1400	01/07/2015	Tcol-MPN= 1200	01/12/2015
				Tcol-MPN= 2000	01/08/2015	Tcol-MPN= 2000	01/01/2016
				Tcol-MPN= 900	01/09/2015	Tcol-MPN= 2000	01/02/2016
				Tcol-MPN= 1600	01/10/2015		
6	**Motinaroli**	Tcol-MPN= 1200	01/03/2016	DO = 5.9	01/09/2015	BOD = 3.3	01/01/2016
		Tcol-MPN= 1800	01/04/2016	Tcol-MPN= 600	01/06/2015	BOD = 3.7	01/02/2016
		Tcol-MPN= 1000	02/05/2016	Tcol-MPN= 1200	01/07/2015	Tcol-MPN= 1200	02/11/2015
				Tcol-MPN= 1000	01/08/2015	Tcol-MPN= 1000	01/12/2015
				Tcol-MPN= 1100	01/09/2015	Tcol-MPN= 800	01/01/2016
				Tcol-MPN= 800	01/10/2015	Tcol-MPN= 1200	01/02/2016

Source: Water Quality Data Book (June 2015 to May 2016) Tapi Basin.

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

XII Basin : West Flowing Rivers from Tapi to Tadri

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Badlapur**	DO = 4.5	02/03/2016	DO = 4.0	02/06/2015	DO = 3.8	11/3/2015
		DO = 4.5	02/04/2016	DO = 4.5	03/07/2015	DO = 4.5	02/12/2015
		DO = 4.5	02/05/2016	DO = 3.1	04/08/2015	DO = 4.5	02/01/2016
		Tcol-MPN= 28000	02/03/2016	DO = 3.8	02/09/2015	DO = 4.6	02/02/2016
		Tcol-MPN= 92000	02/04/2016	DO = 3.8	06/10/2015	Tcol-MPN= 24000	11/3/2015
		Tcol-MPN= 540000	02/05/2016	Tcol-MPN= 240000	02/06/2015	Tcol-MPN= 54000	02/12/2015
				Tcol-MPN= 22000	03/07/2015	Tcol-MPN= 160000	02/01/2016
				Tcol-MPN= 22000	04/08/2015	Tcol-MPN= 22000	02/02/2016
				Tcol-MPN= 1700	02/09/2015		
				Tcol-MPN= 3300	06/10/2015		
2	**Mangaon (Seasonal)**			Tcol-MPN= 24000	03/07/2015		
				Tcol-MPN= 7900	04/08/2015		
				Tcol-MPN= 9400	02/09/2015		
				Tcol-MPN=13000	06/10/2015		
3	**Belne Bridge**			Tcol-MPN= 14000	03/07/2015	Tcol-MPN= 17000	11/2/2015
				Tcol-MPN= 11000	04/08/2015		
				Tcol-MPN= 4900	02/09/2015		
				Tcol-MPN= 35000	06/10/2015		
4	**Gadat**	BOD = 2.7	01/04/2016	Tcol-MPN= 900	01/06/2015	Tcol-MPN= 3800	02/12/2015
		Tcol-MPN= 2000	01/04/2016	Tcol-MPN= 900	01/08/2015	Tcol-MPN= 800	02/02/2016
				Tcol-MPN= 800	01/10/2015		
5	**Durvesh**	BOD = 2.8	01/04/2016	DO = 5.7	01/10/2015	BOD = 2.5	01/02/2016
		Tcol-MPN= 2000	01/04/2016	Tcol-MPN= 600	01/06/2015	Tcol-MPN= 1600	02/12/2015
				Tcol-MPN= 700	01/08/2015	Tcol-MPN= 3000	02/02/2016
				Tcol-MPN= 1200	01/10/2015		

Source: Water Quality Data Book (June 2015 to May 2016) West Flowing Rivers from Tapi to Tadri

Parameters Description:

1 pH is pH_GEN(pH) units)
2 BOD is BOD3-27(mg/L)
3 DO is DO (mg/L)
4 Tcol-MPN is Tcol-MPN (MPN-100ml)

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Erinjipuzha**			pH = 6.3 pH = 6.1	01/08/2015 01/10/2015	pH = 5.8	01/12/2015
2	**Perumannu**	pH = 6.2	01/04/2016	pH = 6.2 DO = 5.6	01/08/2015 01/08/2015	pH = 6.4	01/02/2016
3	**Kuttyadi**	DO = 5.6	01/04/2016	DO = 5.2	01/08/2015		
4	**Kuniyil**	DO = 3.4	01/04/2016	pH = 6.1	01/08/2015	pH = 4.5	01/12/2015
5	**Karathodu**	pH = 6.1	01/04/2016			BOD = 2.4	01/02/2016
6	**Kumbidi**	BOD = 2.2	01/04/2016	DO = 5.8	01/10/2015	pH = 6.2 pH = 6.0	01/12/2015 02/01/2016
7	**Mankara**					DO = 5.8	
8	**Pudur**			DO = 5.8	01/06/2015	pH = 6.0	01/02/2016
9	**Arangaly**			pH = 6.0	01/06/2015	pH = 6.1	01/02/2016
10	**Neeleswaram**			pH = 6.2	01/06/2015		
11	**Vandiperiyar**			DO = 4.6 DO = 5.4	01/06/2015 01/08/2015		
12	**Ramamangalam**			DO = 5.8	01/08/2015		
13	**Kidangoor**	pH = 6.2	01/04/2016				
14	**Malakkara**	pH = 6.1	01/04/2016	DO = 5.8	01/08/2015	BOD = 2.6	01/02/2016
15	**Ayilam**			pH = 6.2	01/08/2015		
16	**Ashramam**	pH = 6.2	01/04/2016				

Source: Water Quality Data Book (June 2015 to May 2016) West Flowing Rivers from Kanyakumari to Tapi.

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

XIV Basin : Mahi

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Mataji**	BOD = 4.2 DO = 5.4 Tcol-MPN= 70	01/04/2016 01/04/2016 01/04/2016	BOD = 3.4 BOD = 2.8 DO = 4.8 Tcol-MPN= 58000 Tcol-MPN= 26000 Tcol-MPN= 7700	01/06/2015 01/10/2015 01/08/2015 01/06/2015 01/08/2015 01/10/2015	BOD = 4.0 Tcol-MPN= 320 Tcol-MPN= 78	01/12/2015 01/12/2015 01/02/2016
2	**Rangeli**	BOD = 2.2 Tcol-MPN= 80	01/04/2016 01/04/2016	BOD = 2.9 BOD = 4.7 BOD = 3.1 Tcol-MPN= 76000 Tcol-MPN= 9400	01/06/2015 01/08/2015 01/10/2015 01/06/2015 01/08/2015 01/10/2015	Tcol-MPN= 91	01/02/2016
3	**Paderdibadi**	BOD = 3.1 BOD = 3.1 BOD = 2.3 Tcol-MPN= 500 Tcol-MPN= 2400 Tcol-MPN= 330	01/03/2016 01/04/2016 02/05/2016 01/03/2016 01/04/2016 02/05/2016	BOD = 6.1 BOD = 3.5 BOD = 4.3 DO = 5.8 Tcol-MPN= 79000 Tcol-MPN= 9400 Tcol-MPN= 33000 Tcol-MPN= 340 Tcol-MPN= 430	01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	BOD = 4.2 BOD = 3.1 Tcol-MPN= 590 Tcol-MPN= 240 Tcol-MPN= 300	01/12/2015 01/01/2016 02/11/2015 01/12/2015 01/01/2016
4	**Khanpur**	BOD = 2.3 BOD = 2.5 BOD = 3.2	01/03/2016 01/04/2016 02/05/2016	BOD = 2.9 BOD = 2.1 BOD = 3.3	01/06/2015 01/07/2015 01/08/2015		

Source: Water Quality Data Book (June 2015 to May 2016) West Flowing Rivers from Kanyakumari to Tapi.

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

XV Basin : Sabarmati

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Derol Bridge**	BOD = 3.8 Tcol-MPN= 80	01/04/2016 01/04/2016	DO = 4.1 Tcol-MPN= 79000 Tcol-MPN= 520	01/10/2015 01/08/2015 01/10/2015	Tcol-MPN= 330 Tcol-MPN= 1300	01/12/2015 01/02/2016
2	**Vautha**	BOD = 32.1 BOD = 17.8 BOD = 18.2 DO = 0.0 DO = 0.1 DO = 0.1 Tcol-MPN= 30000 Tcol-MPN= 17000 Tcol-MPN= 13000	01/03/2016 01/04/2016 02/05/2016 01/03/2016 01/04/2016 02/05/2016 01/03/2016 01/04/2016 02/05/2016	BOD = 26.6 BOD = 21.3 BOD = 5.5 BOD = 24.4 BOD = 38.1 DO = 0.0 DO = 0.0 DO = 1.2 DO = 3.6 Tcol-MPN= 74000 Tcol-MPN= 9400 Tcol-MPN= 8400 Tcol-MPN= 1400 Tcol-MPN= 420	01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015 01/06/2015 01/07/2015 01/09/2015 01/10/2015 01/06/2015 01/07/2015 01/08/2015 01/09/2015 01/10/2015	BOD = 50.8 BOD = 45.8 BOD = 52.7 BOD = 32.6 DO = 0.0 DO = 0.0 DO = 0.0 DO = 0.0 Tcol-MPN= 1500 Tcol-MPN= 8000 Tcol-MPN= 17000 Tcol-MPN= 26000	02/11/2015 01/12/2015 01/01/2016 01/02/2016 02/11/2015 01/12/2015 01/01/2016 01/02/2016 02/11/2015 01/12/2015 01/01/2016 01/02/2016

Source: Water Quality Data Book (June 2015 to May 2016) Mahi, Sabarmati & Other Basins .

Table 12 : Critical Absolute Values of Water Quality Parameters Crossing Tolerance Limits for Class-A by Season during 2015-16

XVI Basin : WFR of Kutch, Saurashtra Including Luni

Sl. No.	Site Name	Summer March to May		Monsoon June to Oct.		Winter Nov. to Feb.	
		Value	Date	Value	Date	Value	Date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	**Abu Road**			BOD = 4.8 BOD = 4.3 Tcol-MPN= 920	01/08/2015 01/10/2015 01/10/2015	BOD = 3.4 Tcol-MPN= 170	01/12/2015 01/12/2015
2	**Chitrasani**	Tcol-MPN= 130	01/04/2016	Tcol-MPN= 630 Tcol-MPN= 3500	01/08/2015 01/10/2015	Tcol-MPN= 60 Tcol-MPN= 110	01/12/2015 01/02/2016
3	**Kamalpur**			BOD = 7.4 BOD = 4.5 Tcol-MPN= 790	01/08/2015 01/10/2015 01/10/2015	Tcol-MPN= 3500	01/12/2015
4	**Lowara**	BOD = 4.8 Tcol-MPN= 70	01/04/2016 01/04/2016	Tcol-MPN= 840 Tcol-MPN= 540	01/08/2015 01/10/2015	BOD = 3.4 Tcol-MPN= 400 Tcol-MPN= 130	01/02/2016 01/12/2015 01/02/2016
5	**Ganod**	Tcol-MPN= 1300	01/04/2016	BOD = 7.3 BOD = 3.9 BOD = 2.3 Tcol-MPN= 79000 Tcol-MPN= 430	01/06/2015 01/08/2015 01/10/2015 01/06/2015 01/08/2015	BOD = 3.4 BOD = 6.4 Tcol-MPN= 220	01/12/2015 01/02/2016 01/12/2015

Source: Water Quality Data Book (June 2015 to May 2016) Mahi, Sabarmati & Other Basins .

Parameters Description:

1 pH is pH_GEN(pH) units)
2 BOD is BOD3-27(mg/L)
3 DO is DO (mg/L)
4 Tcol-MPN is Tcol-MPN (MPN-100ml)

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

I Basin : Mahanadi

Sl. No.	Parameter	Site name	Baronda	Rajim	Basantpur	Pathardih	Simga	Andhiyarkhore	Ghatora	Jondhra	Rampur	Manendragarh
		River/Stream	Pairi	Mahanadi	Mahanadi	Kharun	Seonath	Hamp	Arpa	Seonath	Jonk	Hasdeo
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Q(Cumecs) (Discharge in cubic m/s)	Min	0.00	0.00	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Max	700.00	1161.00	4282.00	321.90	1177.00	75.65	721.10	2083.00	450.30	127.80
2	Temperature (^{o}C)	Min	22.00	28.00	20.00	24.90	21.00	17.00	19.00	18.50	23.50	13.50
		Max	29.00	28.00	36.00	32.20	30.00	30.00	29.00	29.50	29.50	35.00
3	pH_GEN (Negative logarithm of hydrogen iron concentration)	Min	7.70	8.00	7.60	7.40	7.70	7.90	7.30	7.90	7.80	7.20
		Max	8.40	8.00	8.70	7.90	8.50	8.60	8.10	9.00	8.10	8.80
4	Specific Conductance	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
5	Potassium (K)	Min	2.40	3.20	3.30	5.80	5.70	5.60	5.30	4.40	1.70	3.30
		Max	10.20	3.20	17.40	10.50	15.20	13.10	13.00	12.70	6.70	10.40
6	Sodium (Na)	Min	6.40	8.40	9.80	20.00	14.30	26.10	13.40	12.00	10.50	6.70
		Max	21.20	8.40	38.50	27.60	46.70	67.60	38.30	38.80	21.60	26.80
7	Calcium (Ca)	Min	11.00	24.00	14.00	37.00	24.00	18.00	30.00	29.00	22.00	8.00
		Max	18.00	24.00	37.00	55.00	60.00	40.00	61.00	37.00	35.00	29.00
8	Magnesium (Mg)	Min	5.80	5.80	3.90	6.80	1.90	11.70	8.80	12.60	4.90	6.80
		Max	11.70	5.80	15.60	23.30	33.10	44.70	28.20	17.50	12.60	12.60
9	Aluminium (Al)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
10	Iron (Fe)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
11	Ammonia (NH_3-N)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
12	Carbonate (CO_3)	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Max	12.00	0.00	4.80	16.80	32.50	26.40	14.40	14.40	14.40	19.20
13	Bicarbonate (HCO_3)	Min	34.00	90.00	73.00	107.00	78.00	115.00	124.00	71.00	83.00	34.00
		Max	91.00	90.00	151.00	200.00	188.00	322.00	368.00	205.00	154.00	81.00
14	Chloride (CL)	Min	9.00	12.00	11.00	22.00	13.00	14.00	16.00	11.00	6.00	9.00
		Max	14.00	12.00	25.00	64.00	105.00	46.00	77.00	49.00	18.00	22.00
15	Fluoride (F) (F)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
16	Sulphate (SO_4)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
17	Sulphite (SO_3)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
18	Nitrate (NO_3-N)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
19	Nitrite (NO_2-N)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
20	Phosphate (PO_4)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-
21	Silica (Sio_2)	Min	-	-	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-	-	-

Source: Water Quality Year Book (Mahanadi Basin), 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

I Basin : Mahanadi

Sl. No.	Parameter	Site name	Baronda	Rajim	Basantpur	Pathardih	Simga	Andhiyarkhore	Ghatora	Jondhra	Rampur	Manendragarh
		River/Stream	Pairi	Mahanadi	Mahanadi	Kharun	Seonath	Hamp	Arpa	Seonath	Jonk	Hasdeo
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
22	DO	Min	6.30	5.40	-	2.50	4.70	4.10	3.80	5.30	75.00	4.60
	(Dissolved Oxygen)	Max	7.80	5.40	-	5.40	9.40	8.00	7.40	10.30	85.00	9.10
23	BOD3-27	Min	0.10	0.10	0.10	0.60	0.10	0.50	1.30	0.10	0.10	0.20
	(Biochemical Oxygen Demand)	Max	1.10	0.10	1.90	1.30	2.90	7.20	5.40	1.50	0.70	1.80
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(B)	Max	-	-	-	-	-	-	-	-	-	-
31	Cadmium	Min	-	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	68.00	84.00	76.00	153.00	125.00	120.00	113.00	125.00	101.00	65.00
	(HAR _ Total)	Max	77.00	84.00	141.00	233.00	198.00	262.00	238.00	161.00	141.00	125.00
40	Na %	Min	15.00	17.00	14.00	17.00	17.00	23.00	15.00	14.00	17.00	14.00
	(Sodium Percentage)	Max	38.00	17.00	40.00	27.00	40.00	39.00	28.00	35.00	30.00	37.00
41	SAR	Min	0.30	0.40	0.40	0.60	0.50	0.90	0.50	0.40	0.40	0.30
	(Sodium Adsorption Ratio)	Max	1.10	0.40	1.60	1.00	1.70	1.80	1.20	1.40	0.90	1.10
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.10	0.00	0.80	0.00	0.50	1.90	2.20	0.90	0.30	0.00

Source: Water Quality Year Book (Mahanadi Basin), 2015-16

contd...

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

I Basin : Mahanadi

Sl. No.	Parameter	Site name	Bamnidhi	Kurubhata	Sundergarh	Salebhata	Kesinga	Kantamal	Tikarapara	Seorinarayan
		River/Stream	Hasdeo	Mand	Ib	Ong	Tel	Tel	Mahanadi	Mahanadi
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1	Q(Cumecs) (Discharge in cubic m/s)	Min	1.59	0.27	0.00	0.00	7.00	8.58	83.98	0.00
		Max	811.50	1400.00	5652.00	612.50	5400.00	6594.00	12086.00	3343.00
2	Temperature (°C)	Min	17.00	19.50	17.00	21.50	21.00	18.00	20.00	19.40
		Max	30.00	31.60	32.00	30.80	31.70	33.00	32.00	31.60
3	pH_GEN (Negative logarithm of hydrogen iron concentration)	Min	7.70	7.40	7.60	7.50	7.90	7.70	7.20	7.60
		Max	8.50	8.50	8.40	8.70	8.70	8.70	8.20	8.90
4	Specific Conductance	Min	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-
5	Potassium (K)	Min	3.50	1.90	1.60	2.80	2.90	2.70	0.20	4.00
		Max	19.10	24.60	12.70	11.00	25.90	23.10	6.10	35.00
6	Sodium (Na)	Min	9.00	3.60	8.20	9.50	9.50	11.60	1.60	14.50
		Max	36.50	48.60	29.70	49.70	58.50	57.40	12.60	100.60
7	Calcium (Ca)	Min	13.00	10.00	14.00	6.00	14.00	11.00	16.00	19.00
		Max	32.00	26.00	22.00	45.00	35.00	35.00	50.00	50.00
8	Magnesium (Mg)	Min	2.90	1.90	2.90	5.80	5.80	3.90	10.70	5.80
		Max	10.70	11.70	9.70	27.20	25.30	18.40	16.50	22.40
9	Aluminium (Al)	Min	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-
10	Iron (Fe)	Min	-	-	-	-	-	-	0.20	-
		Max	-	-	-	-	-	-	0.70	-
11	Ammonia (NH_3-N)	Min	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-
12	Carbonate (CO_3)	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Max	4.80	7.20	12.00	9.60	21.60	21.60	55.40	19.20
13	Bicarbonate (HCO_3)	Min	49.00	39.00	63.00	51.00	64.00	49.00	56.00	73.00
		Max	176.00	134.00	95.00	239.00	139.00	181.00	107.00	181.00
14	Chloride (CL)	Min	9.00	10.00	9.00	9.00	10.00	9.00	9.40	13.00
		Max	21.00	18.00	23.00	24.00	27.00	25.00	18.90	60.00
15	Fluoride (F) (F)	Min	-	-	-	-	-	-	0.05	-
		Max	-	-	-	-	-	-	0.05	-
16	Sulphate (SO_4)	Min	-	-	-	-	-	-	4.10	-
		Max	-	-	-	-	-	-	15.60	-
17	Sulphite (SO_3)	Min	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-
18	Nitrate (NO_3-N)	Min	-	-	-	-	-	-	0.78	-
		Max	-	-	-	-	-	-	1.22	-
19	Nitrite (NO_2-N)	Min	-	-	-	-	-	-	0.00	-
		Max	-	-	-	-	-	-	0.07	-
20	Phosphate (PO_4)	Min	-	-	-	-	-	-	0.00	-
		Max	-	-	-	-	-	-	0.01	-
21	Silica (Sio_2)	Min	-	-	-	-	-	-	5.00	-
		Max	-	-	-	-	-	-	8.00	-

Source: Water Quality Year Book (Mahanadi Basin), 2015-16

contd...

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

I Basin : Mahanadi

Sl. No.	Parameter	Site name	Bamnidhi	Kurubhata	Sundergarh	Salebhata	Kesinga	Kantamal	Tikarapara	Seorinarayan
		River/Stream	Hasdeo	Mand	Ib	Ong	Tel	Tel	Mahanadi	Mahanadi
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
22	DO	Min	5.60	6.00	6.10	5.80	5.70	5.70	5.20	4.70
	(Dissolved Oxygen)	Max	8.70	8.10	8.50	8.50	9.10	8.60	9.30	9.10
23	BOD3-27	Min	0.10	0.10	0.20	0.10	0.10	0.10	0.60	0.10
	(Biochemical Oxygen Demand)	Max	1.30	1.10	1.50	1.30	4.90	1.50	1.40	2.00
24	Total Coliform	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-	-	0.01	-
	(B)	Max	-	-	-	-	-	-	0.05	-
31	Cadmium	Min	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-
39	Total Hardness	Min	56.00	40.00	64.00	40.00	64.00	56.00	85.00	85.00
	(HAR _ Total)	Max	113.00	89.00	85.00	173.00	165.00	141.00	193.00	213.00
40	Na %	Min	18.00	11.00	19.00	14.00	19.00	17.00	2.00	16.00
	(Sodium Percentage)	Max	37.00	60.00	45.00	45.00	47.00	45.00	19.00	52.00
41	SAR	Min	0.40	0.20	0.40	0.40	0.50	0.50	0.10	0.50
	(Sodium Adsorption Ratio)	Max	1.50	3.30	1.60	1.60	2.40	2.20	0.50	3.40
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.60	1.40	0.20	1.20	0.40	0.50	1.40	0.40

Source: Water Quality Year Book (Mahanadi Basin), 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

II **Basin : Subernarekha**

Sl. No.	Parameter	Site name	Muri	Adityapur	Jamshedpur	Ghatshila	Ghatsila Road Bridge	Baridhi Nala	Kulpatanga	Govindpur	Jamsholaghat
		River/Stream	Subarnarekha	Kharkhai	Subarnarekha	Subarnarekha	Subarnarekha	Baridhi Nala	Kharkhal	Burhabalang	Subarnarekha
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Q(Cumecs)	Min	-	-	-	-	-	-	-	-	-
	(Discharge in cubic m/s)	Max	-	-	-	-	-	-	-	-	-
2	Temperature	Min	17.00	18.00	18.00	17.00	17.00	18.50	18.00	21.00	18.00
	(^{o}C)	Max	31.50	31.00	31.00	30.00	30.50	32.00	32.00	30.00	31.50
3	pH_GEN	Min	7.40	7.10	7.20	7.10	6.90	6.90	7.40	6.60	7.20
	(Negative logarithm of hydrogen iron concentration)	Max	9.30	8.60	8.40	8.60	8.60	7.90	8.90	7.70	8.60
4	Specific	Min	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-
5	Potassium	Min	1.30	1.30	0.30	1.90	2.40	2.80	1.10	1.10	0.80
	(K)	Max	4.60	22.00	8.40	20.80	6.40	30.00	8.20	13.00	6.00
6	Sodium	Min	8.30	5.60	6.80	7.30	7.30	14.80	5.80	3.90	2.40
	(Na)	Max	108.00	118.00	38.10	116.30	33.10	48.70	55.10	21.60	61.60
7	Calcium	Min	19.00	29.00	30.00	24.00	32.00	37.00	24.00	22.00	22.00
	(Ca)	Max	48.00	114.00	93.00	61.00	146.00	56.00	53.00	32.00	61.00
8	Magnesium	Min	8.80	6.80	6.80	7.80	7.80	5.80	5.80	7.80	7.80
	(Mg)	Max	16.50	46.70	38.90	24.30	24.30	22.40	17.50	12.60	21.40
9	Aluminium	Min	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.20	0.20	0.20	0.20	0.10	0.20	0.20	0.20	0.30
	(Fe)	Max	0.60	0.60	0.60	0.60	0.60	0.70	0.60	0.50	0.60
11	Ammonia	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NH_3-N)	Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	22.20	22.20	22.20	55.40	27.70	0.00	27.70	0.00	27.70
13	Bicarbonate	Min	73.00	85.00	51.00	56.00	68.00	107.00	73.00	51.00	73.00
	(HCO_3)	Max	265.00	389.00	254.00	141.00	124.00	163.00	152.00	101.00	113.00
14	Chloride	Min	13.20	9.40	13.20	15.10	11.30	13.20	9.40	11.30	11.30
	(CL)	Max	45.30	116.90	28.30	86.80	50.90	120.70	56.60	18.90	41.50
15	Fluoride (F)	Min	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	(F)	Max	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
16	Sulphate	Min	12.00	3.10	4.50	4.00	17.70	14.40	2.60	9.60	3.20
	(SO_4)	Max	36.80	19.20	17.80	48.80	48.00	129.10	33.00	57.80	49.60
17	Sulphite	Min	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	0.84	0.73	0.81	0.70	0.67	0.73	0.78	0.77	0.81
	(NO_3-N)	Max	1.22	1.12	1.28	1.19	1.25	1.19	1.23	1.09	1.28
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.07	0.03	0.03	0.11	0.07	0.06	0.07	0.03	0.01
20	Phosphate	Min	-	-	-	-	-	-	-	-	-
	(PO_4)	Max	-	-	-	-	-	-	-	-	-
21	Silica	Min	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	(Sio_2)	Max	6.00	6.00	8.00	6.00	7.00	6.00	6.00	8.00	6.00

Source: Water Quality Year Book (Subarnarekha , Burhabalang & Baitarani Basin), 2015-16

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

II **Basin : Subernarekha**

Sl. No.	Parameter	Site name	Muri	Adityapur	Jamshedpur	Ghatshila	Ghatsila Road Bridge	Baridhi Nala	Kulpatanga	Govindpur	Jamsholaghat
		River/Stream	Subarnarekha	Kharkhai	Subarnarekha	Subarnarekha	Subarnarekha	Baridhi Nala	Kharkhal	Burhabalang	Subarnarekha
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
22	DO	Min	4.60	0.60	0.80	4.40	3.80	0.40	1.40	-	5.80
	(Dissolved Oxygen)	Max	12.90	8.90	7.90	10.70	9.10	6.40	8.90	-	9.70
23	BOD3-27	Min	0.40	0.40	0.20	0.60	0.40	0.60	0.20	-	0.40
	(Biochemical Oxygen Demand)	Max	2.60	119.00	79.00	1.20	1.60	60.00	80.00	-	1.60
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	(B)	Max	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
31	Cadmium	Min	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	85.00	104.00	104.00	97.00	117.00	120.00	96.00	89.00	89.00
	(HAR _ Total)	Max	189.00	475.00	394.00	254.00	407.00	225.00	197.00	133.00	241.00
40	Na %	Min	9.00	7.00	10.00	10.00	10.00	20.00	9.00	7.00	4.00
	(Sodium Percentage)	Max	59.00	60.00	32.00	60.00	29.00	38.00	50.00	29.00	45.00
41	SAR	Min	0.30	0.20	0.30	0.30	0.30	0.60	0.20	0.20	0.10
	(Sodium Adsorption Ratio)	Max	3.70	4.20	1.10	4.20	1.10	1.70	2.30	0.90	2.10
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	2.40	0.90	0.00	0.40	0.00	0.00	0.40	0.00	0.00

Source: Water Quality Year Book (Subarnarekha & Burhabalang Basin), 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

III Basin : Brahmani & Baitarani

Sl. No.	Parameter	Site name	Tilga	Jaraikela	Panposh	Gomlai	Jenapur	Talcher	Champua	Kamalanga	Anandpur	Nandira	RSP Nalla
		River/Stream	Sankh	Koel	Brahmani	Brahmani	Brahmani	Brahmani	Baitarani	Brahmani	Baitarani	Nandiranala	RSP Nala
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Q(Cumecs)	Min	-	-	-	-	-	-	-	-	-	-	-
	(Discharge in cubic m/s)	Max	-	-	-	-	-	-	-	-	-	-	-
2	Temperature	Min	18.00	18.00	18.00	17.00	22.00	20.60	20.00	20.00	19.00	20.00	18.00
	(^{o}C)	Max	29.00	34.50	30.00	28.00	37.00	30.00	29.00	29.00	30.00	30.00	30.00
3	pH_GEN	Min	6.60	6.90	7.10	7.30	7.30	7.40	6.70	6.80	7.30	7.40	5.60
	(Negative logarithm of hydrogen iron concentration)	Max	7.90	8.20	7.90	8.50	8.40	8.20	8.50	8.20	8.50	8.20	7.90
4	Specific	Min	-	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	1.00	1.20	1.20	1.60	1.40	1.00	1.80	1.60	0.90	1.70	1.30
	(K)	Max	2.00	2.10	2.50	4.10	6.90	13.00	7.30	8.00	5.30	6.90	15.80
6	Sodium	Min	1.20	1.40	1.30	3.20	4.70	3.90	3.50	4.30	4.30	5.30	2.80
	(Na)	Max	8.90	9.00	9.00	14.40	95.00	19.00	37.00	26.10	19.90	25.00	18.20
7	Calcium	Min	19.00	18.00	16.00	5.00	22.00	18.00	19.00	18.00	16.00	16.00	21.00
	(Ca)	Max	24.00	22.00	42.00	45.00	59.00	26.00	29.00	63.00	35.00	59.00	75.00
8	Magnesium	Min	9.70	10.70	7.80	2.60	6.80	5.80	9.70	7.80	9.70	7.80	10.70
	(Mg)	Max	13.60	13.60	16.50	14.60	29.20	19.40	14.60	23.30	21.40	15.60	19.40
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.40	0.30	0.30	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
	(Fe)	Max	0.60	0.40	0.60	0.50	0.60	0.60	0.70	0.70	0.50	0.60	0.60
11	Ammonia	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NH_3-N)	Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	0.00	27.70	0.00	55.40	55.40	22.20	16.60	16.60	55.40	16.60	0.00
13	Bicarbonate	Min	62.00	56.00	51.00	56.00	51.00	28.00	56.00	62.00	51.00	62.00	45.00
	(HCO_3)	Max	90.00	85.00	113.00	85.00	107.00	90.00	107.00	113.00	113.00	169.00	107.00
14	Chloride	Min	9.40	11.30	11.30	10.10	11.30	9.40	11.30	7.50	7.50	9.40	9.40
	(CL)	Max	18.90	22.60	17.00	28.30	75.40	47.20	24.50	26.40	45.30	32.10	34.00
15	Fluoride (F)	Min	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	(F)	Max	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
16	Sulphate	Min	1.30	1.20	1.90	3.10	7.20	5.30	1.30	8.50	2.00	8.70	2.50
	(SO_4)	Max	4.20	35.60	3.80	32.00	22.30	26.90	56.00	36.40	47.30	26.10	37.20
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	0.81	0.84	0.81	0.81	0.81	0.81	0.69	0.70	0.73	0.83	0.81
	(NO_3-N)	Max	1.28	1.09	1.28	1.25	1.29	1.26	1.06	1.13	1.19	1.25	1.26
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.03	0.07	0.07	0.03	0.11	0.03	0.07	0.07	0.07	0.07	0.07
20	Phosphate	Min	-	-	-	-	-	-	-	-	-	-	-
	(PO_4)	Max	-	-	-	-	-	-	-	-	-	-	-
21	Silica	Min	4.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	(Sio_2)	Max	6.00	6.00	6.00	6.00	7.00	8.00	7.00	7.00	6.00	6.00	7.00

Source: Water Quality Year Book (Brahmani & Baitarani Basin) 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

III Basin : Brahmani & Baitarani

Sl. No.	Parameter	Site name	Tilga	Jaraikela	Panposh	Gomlai	Jenapur	Talcher	Champua	Kamalanga	Anandpur	Nandira	RSP Nalla
		River/Stream	Sankh	Koel	Brahmani	Brahmani	Brahmani	Brahmani	Baitarani	Brahmani	Baitarani	Nandiranala	RSP Nala
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
22	DO	Min	4.80	6.20	3.20	5.60	4.20	6.00	-	4.60	3.40	4.60	1.40
	(Dissolved Oxygen)	Max	9.30	8.90	7.20	8.10	9.10	9.70	-	9.30	9.50	9.30	6.80
23	BOD3-27	Min	0.20	0.20	0.20	0.40	0.40	0.40	-	0.40	0.40	0.20	0.40
	(Biochemical Oxygen Demand)	Max	1.80	1.80	3.40	1.80	2.00	2.80	-	2.20	2.80	2.60	79.00
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	(B)	Max	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.03	0.01	0.01
31	Cadmium	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	93.00	93.00	77.00	23.00	89.00	68.00	93.00	77.00	81.00	72.00	97.00
	(HAR _ Total)	Max	117.00	109.00	173.00	173.00	270.00	145.00	129.00	254.00	153.00	213.00	269.00
40	Na %	Min	3.00	3.00	3.00	7.00	8.00	8.00	6.00	6.00	7.00	9.00	6.00
	(Sodium Percentage)	Max	15.00	15.00	18.00	28.00	66.00	30.00	38.00	39.00	29.00	40.00	27.00
41	SAR	Min	0.10	0.10	0.10	0.10	0.20	0.20	0.10	0.20	0.20	0.20	0.10
	(Sodium Adsorption Ratio)	Max	0.40	0.40	0.40	0.60	4.10	0.90	1.40	1.20	0.90	1.20	0.70
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.00	0.00	0.00	1.40	0.80	0.00	0.00	0.00	0.70	0.00	0.00

Source: Water Quality Year Book (Brahmani & Baitarani Basin) 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IV Basin: Godavari

Sl. No.	Parameter	Site name	Polavaram	Bhadrachalam	Konta	Sangam	Perur	Pathagudem	Jagdalpur	Nowrangpur	Tekra	Bhatapalli
		River/Stream	Godavari	Godavari	Sabari	Murredu	Godavari	Indravati	Indravathi	Indravathi	Pranhita	Peddavagu
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Q(Cumecs)	Min	94.34	5.32	49.11	0.00	1.63	0.17	0.00	1.25	-	-
	(Discharge in cubic m/s)	Max	22433.00	21030.00	7468.00	302.60	22779.00	17670.00	2851.00	1184.00	-	-
2	Temperature	Min	27.00	24.00	23.00	23.00	24.00	23.00	23.00	16.00	18.00	17.00
	(^{o}C)	Max	33.00	31.00	33.00	30.00	31.00	29.00	26.00	32.00	29.00	34.00
3	pH_GEN	Min	7.00	7.40	7.20	7.40	7.00	6.70	7.00	6.70	7.90	8.00
	(Negative logarithm of hydrogen		8.80	8.80	8.60	8.70	8.60	8.70	7.60	8.60	8.70	8.80
	iron concentration)	Max										
4	Specific	Min	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	1.20	1.80	1.10	4.50	1.90	0.90	1.90	1.20	1.70	1.80
	(K)	Max	10.90	3.70	2.10	7.20	3.40	2.30	2.30	2.70	3.80	2.80
6	Sodium	Min	9.00	6.60	4.50	30.30	11.00	5.20	4.40	4.10	10.50	21.90
	(Na)	Max	18.30	39.50	9.90	42.70	34.90	12.90	9.60	15.20	50.30	61.40
7	Calcium	Min	11.00	11.00	8.00	28.00	16.00	8.00	12.00	6.00	22.00	19.00
	(Ca)	Max	19.00	29.00	17.00	38.00	28.00	18.00	18.00	13.00	60.00	63.00
8	Magnesium	Min	4.00	5.30	3.40	16.00	7.30	2.90	5.60	2.40	3.30	13.40
	(Mg)	Max	10.20	18.00	9.00	22.00	15.00	9.20	6.30	7.00	20.30	28.00
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Fe)	Max	0.10	0.10	0.40	0.10	0.30	0.20	0.10	0.50	0.30	0.10
11	Ammonia	Min	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
	(NH_3-N)	Max	0.08	0.03	0.02	0.05	0.37	0.11	0.01	0.11	0.21	0.20
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	5.20	9.70	7.20	8.00	5.90	8.50	0.00	5.60	15.60	15.60
13	Bicarbonate	Min	50.00	62.00	36.00	160.00	90.00	35.00	68.00	35.00	95.00	180.00
	(HCO_3)	Max	132.00	169.00	98.00	202.00	968.00	107.00	81.00	79.00	227.00	324.00
14	Chloride	Min	2.90	1.20	1.00	27.40	4.10	0.50	2.00	0.60	11.90	12.30
	(CL)	Max	11.60	25.90	5.10	51.30	21.20	5.70	3.70	10.20	28.80	25.80
15	Fluoride (F)	Min	0.01	0.01	0.00	0.54	0.01	0.01	0.01	0.01	0.00	0.00
	(F)	Max	0.44	0.41	0.14	1.12	0.42	0.24	0.27	0.23	1.80	1.01
16	Sulphate	Min	4.40	7.00	1.50	23.00	2.90	0.00	0.60	0.00	3.80	1.80
	(SO_4)	Max	21.00	27.40	15.00	69.00	37.80	15.80	17.60	17.80	78.00	35.80
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	0.15	0.03	0.06	0.00	0.04	0.02	0.40	0.08	1.17	1.26
	(NO_3-N)	Max	0.96	1.09	0.79	1.14	1.46	0.72	0.64	0.82	12.14	15.96
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.05	0.07	0.07	0.04	0.07	0.07	0.02	0.07	0.26	0.22
20	Phosphate	Min	0.03	0.02	0.03	0.05	0.02	0.04	0.07	0.04	0.01	0.00
	(PO_4)	Max	0.25	0.26	0.48	0.31	0.32	0.17	0.22	0.72	0.13	0.15
21	Silica	Min	8.40	10.40	12.40	10.80	8.00	13.20	10.20	10.50	14.10	31.20
	(Sio_2)	Max	16.70	24.60	20.40	22.00	23.10	22.90	17.80	19.50	29.90	48.10

Source: Water Quality Year Book (Godavari Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IV Basin Godavari

Sl. No.	Parameter	Site name	Polavaram	Bhadrachalam	Konta	Sangam	Perur	Pathagudem	Jagdalpur	Nowrangpur	Tekra	Bhatapalli
		River/Stream	Godavari	Godavari	Sabari	Murredu	Godavari	Indravati	Indravathi	Indravathi	Pranhita	Peddavagu
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
22	DO	Min	6.00	5.90	5.60	5.00	4.90	4.00	-	7.60	5.70	5.00
	(Dissolved Oxygen)	Max	7.40	7.80	7.20	6.80	7.20	6.90	-	8.30	8.00	9.00
23	BOD3-27	Min	0.20	0.40	0.30	0.10	0.20	0.20	0.30	0.20	0.40	1.00
	(Biochemical Oxygen Demand)	Max	2.20	2.00	1.90	1.00	2.70	1.20	2.50	1.80	3.00	20.00
24	Total Coliform	Min	230.00	2800.00	1300.00	1700.00	80.00	330.00	2200.00	220.00	20.00	130.00
	(No. per 100 ml)	Max	16000.00	16000.00	16000.00	16000.00	16000.00	16000.00	16000.00	16000.00	2200.00	9000.00
25	Faecal Coliform	Min	2.00	20.00	2.00	2.00	2.00	60.00	1300.00	20.00	20.00	60.00
	(No. per 100 ml)	Max	16000.00	16000.00	16000.00	16000.00	16000.00	16000.00	5000.00	9000.00	130.00	1300.00
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	0.30	0.00	0.00	0.00	0.60	0.00	-	-	0.50	1.30
	(As)	Max	0.30	0.00	0.00	0.00	0.60	0.00	-	-	3.30	1.60
30	Boron (ppm)	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
	(B)	Max	0.22	0.14	0.20	0.61	0.27	0.02	0.00	0.45	0.64	0.75
31	Cadmium	Min	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.20	0.20
	(Cd)	Max	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.30	0.30
32	Chromium	Min	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.30	1.40
	(Cr)	Max	0.00	0.00	0.00	0.00	0.00	0.00	-	-	1.50	1.60
33	Copper	Min	-	-	-	-	-	-	-	-	0.70	0.40
	(Cu)	Max	-	-	-	-	-	-	-	-	2.20	2.80
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.30	0.60
	(Pb)	Max	0.00	0.00	0.00	0.00	0.00	0.00	-	-	1.40	1.70
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-
	(Hg)	Max	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-
38	Zinc	Min	0.10	2.00	4.50	2.10	6.40	3.70	-	-	3.60	3.00
	(Zn)	Max	0.10	2.00	4.50	2.10	6.40	3.70	-	-	5.50	4.10
39	Total Hardness	Min	44.00	50.00	34.00	137.00	70.00	32.00	54.00	28.00	77.00	137.00
	(HAR _ Total)	Max	91.00	139.00	80.00	187.00	133.00	82.00	67.00	55.00	223.00	223.00
40	Na %	Min	24.00	22.00	14.00	28.00	25.00	18.00	12.00	17.00	21.00	24.00
	(Sodium Percentage)	Max	33.00	38.00	29.00	36.00	36.00	29.00	25.00	44.00	39.00	40.00
41	SAR	Min	0.60	0.40	0.30	1.00	0.60	0.40	0.20	0.30	0.50	0.80
	(Sodium Adsorption Ratio)	Max	0.90	1.50	0.60	1.40	1.30	0.60	0.50	0.90	1.60	1.80
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
	(Residual Sodium Carbonate)	Max	0.60	0.50	0.40	0.10	13.70	0.50	0.10	0.40	1.10	2.20

Source: Water Quality Year Book (Godavari Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IV Basin Godavari

Sl. No.	Parameter	Site name	Bamni	P.G.Bridge	Nandgaon	Hivra	Asthi	Pauni	Satrapur	Rajegaon	Kumhari	Sakmur
		River/Stream	Wardha	Penganga	Wunna	Wardha	Wainganga	Wainganga	Khanan	Bagh	Wainganga	Wardha
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1	Q(Cumecs)	Min	-	-	-	-	-	-	-	-	-	-
	(Discharge in cubic m/s)	Max	-	-	-	-	-	-	-	-	-	-
2	Temperature	Min	20.00	25.00	15.00	22.00	23.00	20.00	19.00	16.00	16.00	24.00
	(^{o}C)	Max	30.00	28.00	27.50	30.00	32.00	30.00	27.50	26.00	30.00	29.50
3	pH_GEN	Min	7.70	8.10	8.00	8.00	7.50	7.40	7.80	7.30	7.20	8.00
	(Negative logarithm of hydrogen iron concentration)	Max	8.70	8.90	8.50	8.80	9.00	8.50	8.60	8.30	8.40	8.60
4	Specific	Min	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	2.30	2.00	2.20	1.90	1.80	2.30	2.20	1.50	1.40	2.50
	(K)	Max	31.30	3.60	4.40	3.00	4.50	3.50	4.90	2.60	3.80	5.50
6	Sodium	Min	23.20	12.50	24.10	24.90	9.80	14.70	19.30	8.00	12.50	21.70
	(Na)	Max	180.30	51.90	62.30	71.00	31.60	31.90	78.30	16.50	27.10	72.30
7	Calcium	Min	37.00	19.00	36.00	19.00	18.00	26.00	26.00	9.00	15.00	35.00
	(Ca)	Max	109.00	56.00	64.00	55.00	45.00	62.00	90.00	51.00	66.00	73.00
8	Magnesium	Min	11.00	6.00	3.30	13.20	6.00	2.80	7.10	4.80	9.90	5.50
	(Mg)	Max	41.20	27.80	33.00	27.80	18.70	23.00	45.50	31.90	28.30	26.70
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Fe)	Max	0.10	0.10	0.10	0.10	0.50	0.10	0.30	0.20	0.20	0.10
11	Ammonia	Min	0.02	0.02	0.03	0.00	0.00	0.01	0.01	0.09	0.00	0.01
	(NH_3-N)	Max	0.43	0.20	0.23	0.20	0.39	0.38	0.56	0.63	1.10	0.34
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	12.50	12.50	9.40	14.40	21.60	15.60	9.40	6.20	12.50	14.40
13	Bicarbonate	Min	135.00	126.00	190.00	176.00	79.00	103.00	161.00	63.00	114.00	139.00
	(HCO_3)	Max	442.00	273.00	295.00	285.00	181.00	248.00	315.00	154.00	290.00	256.00
14	Chloride	Min	27.80	11.90	21.90	15.90	8.00	11.90	15.90	6.00	8.00	13.90
	(CL)	Max	334.00	113.30	57.60	31.80	25.80	25.80	84.30	11.90	67.60	61.70
15	Fluoride (F)	Min	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00
	(F)	Max	0.49	0.45	1.86	0.52	0.42	0.35	0.96	0.20	0.30	0.69
16	Sulphate	Min	1.70	3.30	1.80	3.50	3.40	3.20	4.90	3.70	4.30	3.30
	(SO_4)	Max	64.00	89.60	85.60	104.60	46.40	40.40	92.00	28.70	34.00	60.60
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	2.73	6.71	2.10	2.39	1.52	1.42	1.02	3.58	1.11	2.11
	(NO_3-N)	Max	16.48	17.01	15.82	11.12	11.71	11.50	11.19	14.28	14.30	16.05
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.41	0.09	0.26	0.21	0.41	0.28	0.23	0.08	0.20	0.22
20	Phosphate	Min	0.03	0.05	0.02	0.01	0.03	0.02	0.01	0.03	0.03	0.05
	(PO_4)	Max	0.35	0.18	0.19	0.23	0.17	0.32	0.22	0.12	0.29	0.19
21	Silica	Min	18.10	18.90	12.20	21.20	3.40	8.60	24.40	14.50	22.40	7.70
	(Sio_2)	Max	45.50	56.50	38.10	65.90	23.50	19.70	43.90	34.40	43.40	24.90

Source: Water Quality Year Book (Godavari Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IV Basin Godavari

Sl. No.	Parameter	Site name	Bamni	P.G.Bridge	Nandgaon	Hivra	Asthi	Pauni	Satrapur	Rajegaon	Kumhari	Sakmur
		River/Stream	Wardha	Penganga	Wunna	Wardha	Wainganga	Wainganga	Kanhan	Bagh	Wainganga	Wardha
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
22	DO	Min	2.90	5.20	3.60	4.50	6.00	5.10	4.80	4.80	5.30	4.20
	(Dissolved Oxygen)	Max	6.70	9.80	6.90	8.00	9.50	8.00	11.40	8.20	8.90	7.20
23	BOD3-27	Min	1.20	1.70	1.00	1.20	1.00	1.00	1.50	1.00	1.00	1.00
	(Biochemical Oxygen Demand)	Max	45.00	50.00	20.00	15.00	4.50	15.00	15.00	15.00	2.60	55.00
24	Total Coliform	Min	80.00	70.00	130.00	80.00	40.00	170.00	220.00	220.00	130.00	40.00
	(No. per 100 ml)	Max	2800.00	1100.00	16000.00	16000.00	2800.00	16000.00	16000.00	1400.00	1700.00	900.00
25	Faecal Coliform	Min	20.00	40.00	20.00	40.00	20.00	80.00	80.00	70.00	80.00	20.00
	(No. per 100 ml)	Max	220.00	170.00	1300.00	130.00	340.00	16000.00	220.00	300.00	270.00	90.00
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	1.20	0.60	0.70	1.10	1.10	0.70	0.80	0.60	0.60	0.90
	(As)	Max	3.20	0.60	3.90	1.90	2.00	2.60	3.60	0.60	1.70	2.50
30	Boron (ppm)	Min	0.09	0.09	0.06	0.09	0.06	0.08	0.08	0.05	0.06	0.06
	(B)	Max	0.61	0.59	0.67	0.35	0.34	0.31	0.70	0.59	0.35	0.72
31	Cadmium	Min	0.50	0.30	0.10	0.40	0.10	0.10	0.20	0.10	0.10	0.20
	(Cd)	Max	0.60	0.30	0.40	0.40	0.20	0.30	0.30	0.10	0.10	0.50
32	Chromium	Min	0.40	1.50	0.30	2.50	0.40	0.10	1.00	0.20	0.60	0.30
	(Cr)	Max	1.70	1.50	1.00	4.70	4.30	1.90	1.60	0.20	0.70	1.30
33	Copper	Min	0.90	0.60	0.90	1.10	0.60	0.70	2.70	0.60	0.50	1.70
	(Cu)	Max	6.20	0.60	3.40	1.20	4.20	2.30	3.80	0.60	1.40	2.40
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	2.50	0.80	1.00	0.90	0.20	0.20	1.00	0.10	0.10	1.80
	(Pb)	Max	3.00	0.80	1.10	1.60	0.70	0.70	2.00	0.10	0.50	2.40
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	4.60	3.40	4.20	3.50	5.40	5.70	3.10	5.80	2.80	4.50
	(Zn)	Max	9.70	3.40	5.10	4.40	20.10	6.70	6.10	5.80	7.50	6.00
39	Total Hardness	Min	152.00	118.00	165.00	134.00	84.00	91.00	138.00	59.00	103.00	129.00
	(HAR _ Total)	Max	445.00	205.00	235.00	237.00	182.00	230.00	347.00	197.00	277.00	294.00
40	Na %	Min	24.00	18.00	21.00	27.00	19.00	18.00	20.00	8.00	15.00	22.00
	(Sodium Percentage)	Max	64.00	40.00	40.00	45.00	39.00	28.00	45.00	24.00	35.00	41.00
41	SAR	Min	0.80	0.50	0.80	0.90	0.50	0.60	0.70	0.30	0.50	0.70
	(Sodium Adsorption Ratio)	Max	5.80	1.80	1.90	2.10	1.30	0.90	2.30	0.70	1.10	2.00
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	1.20	1.40	0.60	1.70	0.90	0.70	0.70	0.20	0.60	0.40

Source: Water Quality Year Book (Godavari Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IV Basin Godavari

Sl. No.	Parameter	Site name	Wairagarh	Ramakona	Keolari	Mancherial	Purna	Kopergaon	Pachegaon
		River/Stream	Khobragarhi	Khanan	Wainganga	Godavari	Purna	Godavari	Pravara
(1)	(2)	(3)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1	Q(Cumecs)	Min	-	-	-	0.00	No Flow/insufficient depth during sampling days	0.00	0.00
	(Discharge in cubic m/s)	Max	-	-	-	369.10		813.30	150.50
2	Temperature	Min	25.00	15.00	20.00	14.50		26.00	23.00
	(^{o}C)	Max	29.00	24.00	28.00	27.00		27.00	24.00
3	pH_GEN	Min	7.60	7.90	7.80	6.40		7.00	6.30
	(Negative logarithm of hydrogen iron concentration)	Max	8.20	8.50	8.40	8.60		8.20	7.90
4	Specific	Min	-	-	-	-		-	-
	Conductance	Max	-	-	-	-		-	-
5	Potassium	Min	1.30	1.40	0.90	2.70		1.70	0.80
	(K)	Max	2.50	2.20	4.60	3.90		6.40	1.40
6	Sodium	Min	8.30	13.30	9.50	28.50		16.60	8.30
	(Na)	Max	12.20	45.50	46.20	64.70		229.00	11.10
7	Calcium	Min	17.00	33.00	26.00	26.00		18.00	18.00
	(Ca)	Max	23.00	74.00	63.00	36.00		83.00	28.00
8	Magnesium	Min	1.60	9.30	3.80	12.60		9.70	9.50
	(Mg)	Max	17.00	25.70	28.60	19.00		48.10	12.00
9	Aluminium	Min	-	-	-	-		-	-
	(Al)	Max	-	-	-	-		-	-
10	Iron	Min	0.00	0.00	0.00	0.00		0.00	0.00
	(Fe)	Max	0.40	0.10	0.20	0.10		0.00	0.00
11	Ammonia	Min	0.01	0.03	0.01	0.01		0.01	0.01
	(NH_3-N)	Max	0.19	0.23	0.38	0.06		0.01	0.07
12	Carbonate	Min	0.00	0.00	0.00	0.00		0.00	0.00
	(CO_3)	Max	0.00	6.20	6.20	4.20		0.00	0.00
13	Bicarbonate	Min	67.00	146.00	117.00	171.00		88.00	103.00
	(HCO_3)	Max	95.00	324.00	242.00	240.00		241.00	117.00
14	Chloride	Min	8.00	11.90	8.20	15.90		10.60	4.80
	(CL)	Max	11.90	19.90	19.90	38.80		229.60	9.70
15	Fluoride (F)	Min	0.00	0.01	0.00	0.33		0.16	0.01
	(F)	Max	0.14	0.91	0.29	0.91		0.68	0.01
16	Sulphate	Min	3.20	3.50	6.50	3.30		16.00	4.50
	(SO_4)	Max	28.00	84.60	57.60	50.00		446.00	5.00
17	Sulphite	Min	-	-	-	-		-	-
	(SO_3)	Max	-	-	-	-		-	-
18	Nitrate	Min	3.25	2.53	1.98	0.22		0.95	0.22
	(NO_3-N)	Max	7.85	13.31	13.94	1.12		2.79	0.55
19	Nitrite	Min	0.00	0.00	0.00	0.00		0.00	0.00
	(NO_2-N)	Max	-	0.21	0.22	0.04		0.01	0.00
20	Phosphate	Min	0.05	0.02	0.00	0.04		0.11	0.02
	(PO_4)	Max	0.70	0.18	0.15	0.23		0.50	0.07
21	Silica	Min	15.10	14.50	19.40	9.50		11.10	13.10
	(Sio_2)	Max	25.90	44.70	56.90	22.20		21.80	13.70

Source: Water Quality Year Book (Godavari Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IV Basin Godavari

Sl. No.	Parameter	Site name	Wairagarh	Ramakona	Keolari	Mancherial	Purna	Kopergaon	Pachegaon
		River/Stream	Khobragarhi	Khanan	Wainganga	Godavari	Purna	Godavari	Pravara
(1)	(2)	(3)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
22	DO	Min	5.90	4.50	4.40	-	No Flow/insufficient depth during sampling days	-	-
	(Dissolved Oxygen)	Max	8.40	10.30	8.90	-		-	-
23	BOD3-27	Min	0.40	0.90	0.90	0.60		0.30	0.30
	(Biochemical Oxygen Demand)	Max	3.90	10.00	30.00	2.10		0.90	1.80
24	Total Coliform	Min	40.00	40.00	130.00	1400.00		16000.00	16000.00
	(No. per 100 ml)	Max	16000.00	16000.00	16000.00	16000.00		16000.00	16000.00
25	Faecal Coliform	Min	20.00	20.00	60.00	140.00		500.00	9000.00
	(No. per 100 ml)	Max	170.00	140.00	220.00	7000.00		16000.00	16000.00
26	Total plate count	Min	-	-	-	-		-	-
	(No. per 100 ml)	Max	-	-	-	-		-	-
27	Phytoplankton	Min	-	-	-	-		-	-
	(No. per ml)	Max	-	-	-	-		-	-
28	Zooplankton	Min	-	-	-	-		-	-
	(No. per Litre)	Max	-	-	-	-		-	-
29	Arsenic (ppm)	Min	-	1.30	0.50	0.80		-	-
	(As)	Max	-	1.40	1.20	0.80		-	-
30	Boron (ppm)	Min	0.13	0.06	0.06	0.00		0.00	0.00
	(B)	Max	0.64	0.57	0.46	0.28		0.82	0.00
31	Cadmium	Min	-	0.20	0.10	0.00		-	-
	(Cd)	Max	-	0.20	0.20	0.00		-	-
32	Chromium	Min	-	0.60	0.40	0.00		-	-
	(Cr)	Max	-	1.30	6.50	0.00		-	-
33	Copper	Min	-	0.60	0.90	-		-	-
	(Cu)	Max	-	2.30	4.00	-		-	-
34	Cyanide	Min	-	-	-	-		-	-
	(Cn)	Max	-	-	-	-		-	-
35	Lead	Min	-	1.30	0.20	0.00		-	-
	(Pb)	Max	-	1.80	0.50	0.00		-	-
36	Manganese	Min	-	-	-	-		-	-
	(Mn)	Max	-	-	-	-		-	-
37	Mercury	Min	-	-	-	0.00		-	-
	(Hg)	Max	-	-	-	0.00		-	-
38	Zinc	Min	-	3.60	6.40	2.30		-	-
	(Zn)	Max	-	7.40	15.40	2.30		-	-
39	Total Hardness	Min	60.00	126.00	107.00	117.00		84.00	86.00
	(HAR _ Total)	Max	121.00	281.00	237.00	169.00		407.00	120.00
40	Na %	Min	14.00	12.00	10.00	29.00		30.00	17.00
	(Sodium Percentage)	Max	28.00	39.00	38.00	46.00		55.00	17.00
41	SAR	Min	0.40	0.40	0.30	1.10		0.80	0.40
	(Sodium Adsorption Ratio)	Max	0.60	1.50	1.60	2.20		5.00	0.40
42	RSC	Min	0.00	0.00	0.00	0.20		0.00	0.00
	(Residual Sodium Carbonate)	Max	0.30	1.00	0.60	0.70		0.00	0.20

Source: Water Quality Year Book (Godavari Basin) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

V Basin : Krishna

Sl. No.	Parameter	Site name	Vijayawada	Keesara	Madhira	Paleru Bridge	Wadenapally	Dameracherla	Halia	Bawapuram	Mantralayam	T. Ramapuram
		River/Stream	Krishna	Munneru	Wyra	Paleru	Krishna	Musi	Halia	Tungabhadra	Tungabhadra	Hagari
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Q(Cumecs)	Min	No Flow/Dry Bed on date of collection	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max		1194.00	347.30	33.60	229.40	100.90	31.36	2081.00	1867.00	1117.00
2	Temperature	Min		25.00	26.00	29.00	25.00	25.00	25.50	21.50	23.00	21.00
	(^{o}C)	Max		27.00	31.00	30.00	26.00	28.50	29.00	29.00	33.00	29.00
3	pH_GEN	Min		7.80	7.90	7.50	7.50	7.60	7.30	7.60	7.20	6.70
	(Negative logarithm of hydrogen iron concentration)	Max		8.20	8.20	7.90	8.60	8.30	8.90	8.70	8.70	8.60
4	Specific	Min		-	-	-	-	-	-	-	-	-
	Conductance	Max		-	-	-	-	-	-	-	-	-
5	Potassium	Min		3.10	3.20	4.10	2.70	2.40	5.00	3.70	3.90	2.00
	(K)	Max		4.90	3.90	4.70	4.90	7.60	11.50	7.70	7.20	6.40
6	Sodium	Min		57.40	52.40	86.00	56.60	87.50	103.70	133.30	36.00	80.30
	(Na)	Max		134.70	123.80	106.20	98.40	155.00	170.70	274.60	236.90	221.00
7	Calcium	Min		26.00	34.00	47.00	24.00	42.00	29.00	38.00	33.00	30.00
	(Ca)	Max		40.00	45.00	57.00	51.00	59.00	44.00	48.00	55.00	58.00
8	Magnesium	Min		14.60	18.90	27.20	13.40	23.80	15.80	21.40	18.40	17.00
	(Mg)	Max		23.00	25.20	33.00	29.60	34.50	25.60	28.20	32.10	33.40
9	Aluminium	Min		-	-	-	-	-	-	-	-	-
	(Al)	Max		-	-	-	-	-	-	-	-	-
10	Iron	Min		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Fe)	Max		0.10	0.10	0.00	0.10	0.10	0.10	0.10	0.60	0.50
11	Ammonia	Min		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NH_3-N)	Max		0.08	0.05	0.00	0.08	0.13	0.07	0.05	0.04	0.04
12	Carbonate	Min		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max		0.00	0.00	0.00	7.70	4.20	9.20	11.00	7.80	9.10
13	Bicarbonate	Min		191.00	223.00	274.00	135.00	218.00	200.00	184.00	95.00	132.00
	(HCO_3)	Max		344.00	394.00	313.00	223.00	323.00	385.00	271.00	283.00	282.00
14	Chloride	Min		48.30	37.20	84.80	50.70	83.90	86.60	99.10	22.30	35.10
	(CL)	Max		130.70	86.00	129.00	100.90	173.60	123.30	223.40	183.70	196.30
15	Fluoride (F)	Min		0.65	0.69	0.90	0.26	0.88	0.44	0.34	0.56	0.52
	(F)	Max		1.01	1.04	1.38	0.91	1.36	1.58	1.30	0.90	1.03
16	Sulphate	Min		20.50	11.50	76.50	57.00	82.00	64.00	96.00	26.80	1.00
	(SO_4)	Max		51.80	94.00	84.50	116.20	180.30	125.30	351.00	340.00	340.00
17	Sulphite	Min		-	-	-	-	-	-	-	-	-
	(SO_3)	Max		-	-	-	-	-	-	-	-	-
18	Nitrate	Min		0.18	0.53	0.58	0.45	0.14	0.46	0.00	0.39	0.73
	(NO_3-N)	Max		1.93	1.55	1.26	2.23	2.19	2.61	1.47	1.86	2.77
19	Nitrite	Min		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max		0.03	0.07	0.00	0.19	0.06	0.19	0.21	0.24	0.04
20	Phosphate	Min		0.07	0.09	0.05	0.07	0.08	0.04	0.07	0.04	0.11
	(PO_4)	Max		0.26	0.46	0.19	0.24	0.18	0.32	0.43	0.45	0.39
21	Silica	Min		5.10	8.10	3.00	5.10	5.50	10.40	4.10	1.40	5.70
	(Sio_2)	Max		14.80	19.20	45.00	23.50	45.10	31.80	20.10	19.60	17.80

Source: Water Quality Year Book (Krishna Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

V Basin : Krishna

Sl. No.	Parameter	Site name	Vijayawada	Keesara	Madhira	Paleru Bridge	Wadenapally	Dameracherla	Halia	Bawapuram	Mantralayam	T. Ramapuram
		River/Stream	Krishna	Munneru	Wyra	Paleru	Krishna	Musi	Halia	Tungabhadra	Tungabhadra	Hagari
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
22	DO	Min	No Flow/Dry Bed on date of collection	4.20	3.00	2.40	4.20	5.20	2.20	1.20	1.60	4.00
	(Dissolved Oxygen)	Max		6.40	6.40	3.00	7.30	7.80	7.20	6.90	7.00	8.70
23	BOD3-27	Min		1.00	0.30	0.40	0.30	0.70	0.80	1.00	0.70	0.40
	(Biochemical Oxygen Demand)	Max		4.10	3.10	0.80	2.50	3.70	2.10	3.70	2.90	2.80
24	Total Coliform	Min		2800.00	3500.00	220.00	220.00	1100.00	2200.00	2.00	340.00	340.00
	(No. per 100 ml)	Max		16000.00	16000.00	16000.00	16000.00	16000.00	16000.00	16000.00	16000.00	16000.00
25	Faecal Coliform	Min		500.00	170.00	2.00	2.00	40.00	300.00	2.00	20.00	2.00
	(No. per 100 ml)	Max		16000.00	9000.00	1700.00	16000.00	16000.00	16000.00	16000.00	16000.00	16000.00
26	Total plate count	Min		-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max		-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min		-	-	-	-	-	-	-	-	-
	(No. per ml)	Max		-	-	-	-	-	-	-	-	-
28	Zooplankton	Min		-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max		-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min		-	-	-	0.00	-	0.00	-	-	-
	(As)	Max		-	-	-	0.00	-	0.00	-	-	-
30	Boron (ppm)	Min		0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00
	(B)	Max		0.33	0.23	0.27	0.25	0.51	0.09	0.57	0.30	0.63
31	Cadmium	Min		-		-	0.00	-	0.00	-	-	-
	(Cd)	Max		-	-	-	0.00	-	0.00	-	-	-
32	Chromium	Min		-	-	-	0.00	-	0.00	-	-	-
	(Cr)	Max		-	-	-	0.00	-	0.00	-	-	-
33	Copper	Min		-	-	-	-	-	-	-	-	-
	(Cu)	Max		-	-	-	-	-	-	-	-	-
34	Cyanide	Min		-	-	-	-	-	-	-	-	-
	(Cn)	Max		-	-	-	-	-	-	-	-	-
35	Lead	Min		-	-	-	0.00	-	0.00	-	-	-
	(Pb)	Max		-	-	-	0.00	-	0.00	-	-	-
36	Manganese	Min		-	-	-	-	-	-	-	-	-
	(Mn)	Max		-	-	-	-	-	-	-	-	-
37	Mercury	Min		-	-	-	0.00	-	0.00	-	-	-
	(Hg)	Max		-	-	-	0.00	-	0.00	-	-	-
38	Zinc	Min		-	-	-	0.04	-	0.03	-	-	-
	(Zn)	Max		-	-	-	0.04	-	0.03	-	-	-
39	Total Hardness	Min		127.00	163.00	231.00	116.00	205.00	138.00	185.00	159.00	147.00
	(HAR _ Total)	Max		196.00	217.00	280.00	251.00	292.00	217.00	238.00	272.00	285.00
40	Na %	Min		46.00	41.00	43.00	43.00	45.00	60.00	59.00	23.00	49.00
	(Sodium Percentage)	Max		60.00	57.00	45.00	58.00	54.00	63.00	72.00	65.00	68.00
41	SAR	Min		2.20	1.80	2.40	2.10	2.70	3.90	4.10	1.00	2.60
	(Sodium Adsorption Ratio)	Max		4.20	3.70	2.80	3.10	4.00	5.20	7.90	6.30	6.40
42	RSC	Min		0.30	0.30	0.00	0.00	0.00	0.50	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max		1.70	2.10	0.20	0.00	0.30	2.00	0.40	0.80	0.40

Source: Water Quality Year Book (Krishna Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

V Basin : Krishna

Sl. No.	Parameter	Site name	Kellodu	Hoovinahole	Marol	Haralahalli	Byaladahalli	Kuppelur	Honnali	Shimoga	Holehonnur	Yadgir	Malkhed
		River/Stream	Vedavathi	Swarnamukhi	Varada	Tungabhadra	Haridra	Kumudavathi	Tungabhadra	Tunga	Bhadra	Bhima	Kagna
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
1	Q(Cumecs)	Min	0.00	0.00	0.00	0.00	0.00	0.00	12.30	0.71	9.46	0.00	0.49
	(Discharge in cubic m/s)	Max	77.00	7.17	260.20	1712.00	117.30	34.12	1870.00	2023.00	383.70	297.00	120.70
2	Temperature	Min	27.00	17.00	26.50	25.00	24.50	27.00	23.00	23.50	21.50	24.00	22.00
	(^{o}C)	Max	28.00	17.00	27.00	25.00	26.00	28.00	31.00	27.50	26.00	27.00	31.00
3	pH_GEN	Min	7.60	8.10	7.20	7.30	7.30	7.30	6.40	6.30	6.70	6.70	7.90
	(Negative logarithm of hydrogen iron concentration)	Max	8.20	8.10	7.60	7.50	8.10	7.90	7.50	7.40	7.90	8.20	8.60
4	Specific	Min	-	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	3.60	1.70	1.10	4.50	1.80	2.70	1.20	0.90	1.20	3.50	3.90
	(K)	Max	5.40	1.70	1.30	5.70	6.30	4.20	1.80	4.10	5.50	5.30	5.40
6	Sodium	Min	18.50	48.50	4.10	28.10	38.00	17.10	4.50	3.50	6.60	57.10	37.30
	(Na)	Max	102.10	48.50	9.40	58.00	89.80	24.40	10.40	9.30	16.20	94.10	58.80
7	Calcium	Min	13.00	26.00	7.00	19.00	30.00	18.00	9.00	5.00	11.00	29.00	30.00
	(Ca)	Max	35.00	26.00	13.00	30.00	50.00	32.00	18.00	12.00	27.00	44.00	39.00
8	Magnesium	Min	3.90	12.60	2.90	7.80	8.70	9.70	3.40	1.50	3.90	15.50	16.50
	(Mg)	Max	25.30	12.60	7.80	14.60	22.40	11.70	7.80	7.80	11.70	26.20	22.30
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.20	0.20	0.10	0.20	0.10	0.10	0.10	0.00	0.10	0.00	0.00
	(Fe)	Max	0.70	0.20	0.70	0.40	0.20	0.30	0.30	0.30	1.50	0.00	0.30
11	Ammonia	Min	-	-	-	-	-	-	-	-	-	0.00	0.00
	(NH_3-N)	Max	-	-	-	-	-	-	-	-	-	0.00	0.06
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20
13	Bicarbonate	Min	91.00	202.00	27.00	77.00	156.00	91.00	35.00	19.00	38.00	150.00	207.00
	(HCO_3)	Max	332.00	202.00	54.00	173.00	264.00	133.00	76.00	59.00	99.00	284.00	295.00
14	Chloride	Min	10.30	43.00	9.90	41.50	33.40	35.90	9.90	6.00	13.10	44.80	20.00
	(CL)	Max	100.10	43.00	22.70	73.80	87.00	41.20	26.30	21.30	41.50	86.00	31.60
15	Fluoride (F)	Min	0.15	0.17	0.04	0.02	0.42	0.19	0.04	0.06	0.08	0.64	0.44
	(F)	Max	0.95	0.17	0.21	0.59	1.65	0.63	0.23	0.15	0.38	0.86	0.72
16	Sulphate	Min	6.20	8.60	5.30	17.10	19.50	6.90	3.10	1.90	3.30	40.00	3.40
	(SO_4)	Max	42.20	8.60	11.00	30.50	78.80	19.00	8.40	5.90	15.20	112.00	25.30
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	0.50	1.01	0.34	0.48	0.73	0.59	0.38	0.32	0.52	0.87	0.68
	(NO_3-N)	Max	1.28	1.01	1.05	2.05	1.84	1.50	1.08	0.84	1.39	1.22	2.71
19	Nitrite	Min	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.04	0.01	0.01	0.01	0.28	0.03	0.08	0.18	0.06	0.12	0.13
20	Phosphate	Min	0.33	0.28	0.01	0.04	0.08	0.05	0.00	0.00	0.00	0.10	0.04
	(PO_4)	Max	0.46	0.28	0.40	0.26	0.44	0.47	0.27	0.48	1.50	0.25	0.21
21	Silica	Min	6.40	8.90	7.10	9.90	4.90	10.70	7.40	6.60	7.00	7.50	8.10
	(Sio_2)	Max	30.70	8.90	22.40	26.20	19.30	18.60	27.40	20.80	25.70	17.70	26.50

Source: Water Quality Year Book (Krishna Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

V Basin : Krishna

Sl. No.	Parameter	Site name	Kellodu	Hoovinahole	Marol	Haralahalli	Byaladahalli	Kuppelur	Honnali	Shimoga	Holehonnur	Yadgir	Malkhed
		River/Stream	Vedavathi	Swarnamukhi	Varada	Tungabhadra	Haridra	Kumudavathi	Tungabhadra	Tunga	Bhadra	Bhima	Kagna
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
22	DO	Min	-	-	-	4.70	-	3.80	5.00	0.60	3.60	3.50	4.30
	(Dissolved Oxygen)	Max	-	-	-	5.60	-	5.90	8.90	6.50	7.10	5.80	6.70
23	BOD3-27	Min	-	-	-	0.40	-	0.80	0.40	0.40	0.20	1.80	0.10
	(Biochemical Oxygen Demand)	Max	-	-	-	0.40	-	1.50	2.20	21.70	2.80	2.70	1.90
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-	300.00	800.00
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	16000.00	16000.00
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-	70.00	2.00
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	3000.00	16000.00
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	3.00	3.10	0.70	-	0.00
	(As)	Max	-	-	-	-	-	-	3.00	3.10	3.70	-	0.00
30	Boron (ppm)	Min	0.30	0.15	0.09	-	0.14	0.10	0.05	0.08	0.05	0.00	0.00
	(B)	Max	0.58	0.15	1.62	-	1.91	1.78	1.59	0.32	0.44	0.26	0.31
31	Cadmium	Min	-	-	-	-	-	-	-	-	0.00	-	0.00
	(Cd)	Max	-	-	-	-	-	-	-	-	0.00	-	0.00
32	Chromium	Min	-	-	-	-	-	-	3.00	2.10	0.10	-	0.00
	(Cr)	Max	-	-	-	-	-	-	3.00	2.10	1.00	-	0.00
33	Copper	Min	-	-	-	-	-	-	0.50	0.30	0.01	-	-
	(Cu)	Max	-	-	-	-	-	-	0.50	0.30	1.00	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	0.10	-	0.00
	(Pb)	Max	-	-	-	-	-	-	-	-	0.10	-	0.00
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-	0.00
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-	0.00
38	Zinc	Min	-	-	-	-	-	-	9.80	0.70	3.10	-	0.09
	(Zn)	Max	-	-	-	-	-	-	9.80	0.70	20.80	-	0.09
39	Total Hardness	Min	48.00	117.00	32.00	80.00	116.00	85.00	36.00	20.00	48.00	137.00	143.00
	(HAR _ Total)	Max	193.00	117.00	64.00	137.00	197.00	121.00	189.00	56.00	117.00	219.00	191.00
40	Na %	Min	43.00	47.00	21.00	42.00	41.00	27.00	19.00	20.00	16.00	45.00	32.00
	(Sodium Percentage)	Max	59.00	47.00	27.00	47.00	49.00	34.00	41.00	33.00	28.00	53.00	41.00
41	SAR	Min	1.20	2.00	0.30	1.40	1.50	0.80	0.30	0.30	0.40	2.10	1.30
	(Sodium Adsorption Ratio)	Max	3.50	2.00	0.50	2.20	2.80	1.00	1.90	0.50	0.80	2.90	1.90
42	RSC	Min	0.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30
	(Residual Sodium Carbonate)	Max	1.60	1.00	0.00	0.10	0.80	0.00	0.00	0.00	0.00	0.30	1.50

Source: Water Quality Year Book (Krishna Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

V Basin : Krishna

Sl. No.	Parameter	Site name	Takli	Sarati	Phulgaon	Huvinhedgi	Cholachagudda	Gokakfalls	Kurundwad	Arjunwad	Samdoli	Karad	Warunji
		River/Stream	Bhima	Nira	Bhima	Krishna	Malaprabha	Ghataprabha	Krishna	Krishna	Varna	Krishna	Koyna
(1)	(2)	(3)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
1	Q(Cumecs)	Min	Samples not collected due to no flow/drybed	Samples not collected due to no flow/dry bed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max			310.80	714.80	167.50	342.60	2522.00	1460.00	644.80	1046.00	235.70
2	Temperature	Min			23.00	24.00	23.00	21.00	24.50	25.00	25.00	23.50	20.00
	(^{o}C)	Max			23.00	31.00	23.00	22.00	28.00	25.00	27.50	23.50	20.00
3	pH_GEN	Min			8.00	7.20	7.90	7.60	7.50	7.80	7.50	7.70	7.70
	(Negative logarithm of hydrogen iron concentration)	Max			8.00	8.60	7.90	7.70	7.70	7.90	7.80	7.70	7.70
4	Specific	Min			-	-	-	-	-	-	-	-	-
	Conductance	Max			-	-	-	-	-	-	-	-	-
5	Potassium	Min			1.00	1.20	1.30	0.50	0.50	0.70	0.30	0.40	0.20
	(K)	Max			1.00	4.80	1.30	1.10	1.70	1.40	1.40	0.40	0.20
6	Sodium	Min			10.20	65.00	38.00	9.80	9.80	10.80	8.40	4.70	6.40
	(Na)	Max			10.20	219.00	38.00	13.90	19.70	47.70	28.00	4.70	6.40
7	Calcium	Min			29.00	38.00	34.00	16.00	26.00	19.00	16.00	29.00	19.00
	(Ca)	Max			29.00	60.00	34.00	24.00	29.00	35.00	24.00	29.00	19.00
8	Magnesium	Min			5.80	21.10	3.90	3.90	5.80	2.90	3.90	5.80	5.80
	(Mg)	Max			5.80	37.80	3.90	8.80	7.80	12.60	10.70	5.80	5.80
9	Aluminium	Min			-	-	-	-	-	-	-	-	-
	(Al)	Max			-	-	-	-	-	-	-	-	-
10	Iron	Min			2.80	0.00	2.00	1.00	1.50	1.20	1.60	2.40	1.40
	(Fe)	Max			2.80	0.40	2.00	2.90	2.80	3.70	3.30	2.40	1.40
11	Ammonia	Min			-	0.00	-	-	-	-	-	-	-
	(NH_3-N)	Max			-	0.14	-	-	-	-	-	-	-
12	Carbonate	Min			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max			0.00	5.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Bicarbonate	Min			117.00	118.00	118.00	51.00	67.00	76.00	66.00	76.00	61.00
	(HCO_3)	Max			117.00	289.00	118.00	72.00	103.00	117.00	77.00	76.00	61.00
14	Chloride	Min			19.20	19.00	51.60	17.40	17.00	18.70	13.70	8.20	9.90
	(CL)	Max			19.20	208.70	51.60	24.00	33.50	77.10	54.20	8.20	9.90
15	Fluoride (F)	Min			0.71	0.10	0.56	0.34	0.32	0.36	0.33	2.40	0.50
	(F)	Max			0.71	1.30	0.56	0.74	0.58	0.63	0.62	2.40	0.50
16	Sulphate	Min			14.60	73.00	20.30	9.70	15.30	15.30	14.90	17.50	15.60
	(SO_4)	Max			14.60	336.00	20.30	26.20	27.30	59.00	34.40	17.50	15.60
17	Sulphite	Min			-	-	-	-	-	-	-	-	-
	(SO_3)	Max			-	-	-	-	-	-	-	-	-
18	Nitrate	Min			1.84	0.48	1.56	0.89	1.23	0.86	1.06	1.28	0.79
	(NO_3-N)	Max			1.84	1.58	1.56	2.10	1.66	2.24	2.26	1.28	0.79
19	Nitrite	Min			0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00
	(NO_2-N)	Max			0.01	0.11	0.01	0.01	0.01	0.01	0.01	0.01	0.00
20	Phosphate	Min			0.05	0.06	0.01	0.01	0.00	0.01	0.00	0.00	0.02
	(PO_4)	Max			0.05	0.33	0.01	0.02	0.02	0.03	0.02	0.00	0.02
21	Silica	Min			12.20	4.00	2.30	0.50	1.10	4.20	4.50	6.70	17.00
	(Sio_2)	Max			12.20	33.10	2.30	17.00	18.10	17.60	15.70	6.70	17.00

Source: Water Quality Year Book (Krishna Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

V Basin : Krishna

Sl. No.	Parameter	Site name	Takli	Sarati	Phulgaon	Huvinhedgi	Cholachagudda	Gokakfalls	Kurundwad	Arujnwad	Samdoli	Karad	Warunji
		River/Stream	Bhima	Nira	Bhima	Krishna	Malaprabha	Ghataprabha	Krishna	Krishna	Varna	Krishna	Koyna
(1)	(2)	(3)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
22	DO	Min	Samples not collected due to no flow/drybed	Samples not collected due to no flow/dry bed	-	4.70	7.80	6.80	5.90	4.00	4.70	6.20	5.90
	(Dissolved Oxygen)	Max			-	7.30	7.80	6.80	7.00	9.00	6.00	6.20	5.90
23	BOD3-27	Min			1.10	0.30	1.60	0.60	0.60	0.80	0.50	0.80	1.00
	(Biochemical Oxygen Demand)	Max			1.10	3.40	1.60	2.30	1.70	1.70	1.00	0.80	1.00
24	Total Coliform	Min			-	170.00	-	400.00	4900.00	2100.00	4000.00	2200.00	11000.00
	(No. per 100 ml)	Max			-	16000.00	-	3300.00	40000.00	24000.00	17000.00	2200.00	11000.00
25	Faecal Coliform	Min			-	2.00	-	200.00	3300.00	1700.00	3300.00	1700.00	7900.00
	(No. per 100 ml)	Max			-	16000.00	-	2300.00	34000.00	13000.00	13000.00	1700.00	7900.00
26	Total plate count	Min			-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max			-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min			-	-	-	-	-	-	-	-	-
	(No. per ml)	Max			-	-	-	-	-	-	-	-	-
28	Zooplankton	Min			-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max			-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min			-	-	-	-	-	-	-	-	-
	(As)	Max			-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min			0.11	0.00	0.08	0.05	0.06	0.01	0.01	0.06	0.14
	(B)	Max			0.11	0.23	0.08	0.11	0.60	0.14	0.11	0.06	0.14
31	Cadmium	Min			-	-	-	-	-	-	-	-	-
	(Cd)	Max			-	-	-	-	-	-	-	-	-
32	Chromium	Min			-	-	-	-	-	-	-	-	-
	(Cr)	Max			-	-	-	-	-	-	-	-	-
33	Copper	Min			-	-	-	-	-	-	-	-	-
	(Cu)	Max			-	-	-	-	-	-	-	-	-
34	Cyanide	Min			-	-	-	-	-	-	-	-	-
	(Cn)	Max			-	-	-	-	-	-	-	-	-
35	Lead	Min			-	-	-	-	-	-	-	-	-
	(Pb)	Max			-	-	-	-	-	-	-	-	-
36	Manganese	Min			-	-	-	-	-	-	-	-	-
	(Mn)	Max			-	-	-	-	-	-	-	-	-
37	Mercury	Min			-	-	-	-	-	-	-	-	-
	(Hg)	Max			-	-	-	-	-	-	-	-	-
38	Zinc	Min			-	-	-	-	-	-	-	-	-
	(Zn)	Max			-	-	-	-	-	-	-	-	-
39	Total Hardness	Min			96.00	182.00	100.00	60.00	89.00	77.00	64.00	96.00	72.00
	(HAR _ Total)	Max			96.00	298.00	100.00	97.00	105.00	137.00	105.00	96.00	72.00
40	Na %	Min			19.00	35.00	45.00	22.00	19.00	23.00	22.00	10.00	16.00
	(Sodium Percentage)	Max			19.00	62.00	45.00	29.00	32.00	43.00	37.00	10.00	16.00
41	SAR	Min			0.50	1.80	1.70	0.50	0.40	0.50	0.50	0.20	0.30
	(Sodium Adsorption Ratio)	Max			0.50	5.50	1.70	0.60	0.90	1.80	1.20	0.20	0.30
42	RSC	Min			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Water Quality Year Book (Krishna Basin) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VI Basin : Cauvery

Sl. No.	Parameter	Site name	Gopurajapuram	Annavasal	Nallathur	Menangudi	Porakudi	Peralam	Thengudi	Musiri	Nallamaranpatty	Elunuthimangalam
		River/Stream	Puravidaiyanar	Nattar	Nandalar	Noolar	Arasalar	Vanjiyar	Thirumalairajanar	Cauvery	Amaravathi	Noyyal
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Q(Cumecs)	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48	0.00	0.00
	(Discharge in cubic m/s)	Max	31.43	8.16	56.36	12.89	44.80	2.78	39.39	683.90	672.00	101.40
2	Temperature	Min	28.50	25.00	25.00	25.50	23.50	25.00	25.50	22.00	25.00	26.50
	(°C)	Max	30.00	29.00	31.50	31.50	33.00	31.00	30.00	30.00	29.00	29.00
3	pH_GEN	Min	7.30	7.60	7.50	7.20	7.50	7.40	7.20	8.00	7.90	8.00
	(Negative logarithm of hydrogen iron concentration)	Max	7.80	8.30	8.40	8.50	8.50	8.50	8.40	8.70	8.30	8.90
4	Specific	Min	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	1.90	3.40	2.00	2.20	2.70	1.30	1.20	4.10	3.80	13.80
	(K)	Max	4.30	4.40	6.80	5.20	5.20	7.20	5.90	9.50	6.80	46.70
6	Sodium	Min	15.10	21.50	55.10	37.50	30.50	25.40	38.40	29.00	13.80	131.00
	(Na)	Max	52.60	39.10	204.50	65.00	83.90	66.70	90.00	94.00	64.30	859.00
7	Calcium	Min	8.00	16.00	21.00	21.00	17.00	11.00	19.00	17.00	25.00	49.00
	(Ca)	Max	29.00	23.00	43.00	29.00	32.00	30.00	39.00	46.00	51.00	103.00
8	Magnesium	Min	4.90	8.90	10.70	8.10	9.70	5.70	9.70	13.50	7.70	32.70
	(Mg)	Max	27.60	23.50	32.40	19.50	22.70	25.10	22.40	41.20	21.10	186.80
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	-	-	-	-	-	-	-	0.00	0.00	0.00
	(Fe)	Max	-	-	-	-	-	-	-	0.08	0.02	0.08
11	Ammonia	Min	0.04	0.04	0.03	0.02	0.02	0.01	0.02	0.00	0.17	0.03
	(NH_3-N)	Max	0.06	0.06	0.12	0.07	0.06	0.06	0.11	0.61	0.28	1.10
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	0.00	16.90	22.60	22.60	33.90	22.60	16.90	27.60	32.20	112.20
13	Bicarbonate	Min	50.00	95.00	63.00	69.00	69.00	75.00	69.00	141.00	103.00	214.00
	(HCO_3)	Max	189.00	161.00	362.00	191.00	168.00	189.00	253.00	252.00	107.00	532.00
14	Chloride	Min	22.00	30.30	77.10	49.60	44.10	33.00	49.60	40.60	19.20	180.80
	(CL)	Max	77.60	57.80	264.30	107.00	109.70	115.10	117.70	115.40	121.20	1175.30
15	Fluoride (F)	Min	0.21	0.25	0.28	0.32	0.27	0.30	0.33	0.47	0.49	0.40
	(F)	Max	0.45	0.41	0.86	0.46	0.43	0.58	0.62	0.57	0.49	1.52
16	Sulphate	Min	3.50	3.40	22.50	6.60	9.40	2.50	8.80	13.50	9.80	81.80
	(SO_4)	Max	21.80	20.10	76.70	30.80	36.50	35.70	45.90	58.20	30.90	389.60
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	0.17	0.18	0.19	0.24	0.18	0.20	0.24	1.15	1.25	4.77
	(NO_3-N)	Max	0.86	0.35	1.25	0.52	0.62	0.99	1.22	6.14	3.61	20.20
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
	(NO_2-N)	Max	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.15	0.04	0.45
20	Phosphate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.44
	(PO_4)	Max	0.04	0.02	0.24	0.03	0.07	0.11	0.19	0.07	0.34	1.75
21	Silica	Min	-	-	-	-	-	-	-	11.70	16.50	18.00
	(Sio_2)	Max	-	-	-	-	-	-	-	23.40	19.00	58.60

Source: Water Quality Year Book (Cauvery Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VI Basin : Cauvery

Sl. No.	Parameter	Site name	Gopurajapuram	Annavasal	Nallathur	Menangudi	Porakudi	Peralam	Thengudi	Musiri	Nallamaranpatty	Elunuthimangalam
		River/Stream	Puravidaiyanar	Nattar	Nandalar	Noolar	Arasalar	Vanjiyar	Thirumalairajanar	Cauvery	Amaravathy	Noyyal
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
22	DO	Min	-	-	-	-	-	-	4.60	6.00	8.90	3.70
	(Dissolved Oxygen)	Max	-	-	-	-	-	-	6.50	7.00	8.90	6.80
23	BOD3-27	Min	0.90	0.70	1.10	0.90	0.70	0.90	0.90	1.20	3.70	1.90
	(Biochemical Oxygen Demand)	Max	2.20	2.00	2.60	2.20	2.60	2.70	2.70	3.50	5.70	5.70
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-	-	-	0.02	0.00	0.10
	(B)	Max	-	-	-	-	-	-	-	0.19	0.02	0.63
31	Cadmium	Min	-	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	40.00	77.00	101.00	97.00	84.00	50.00	87.00	128.00	95.00	263.00
	(HAR _ Total)	Max	162.00	138.00	242.00	145.00	148.00	151.00	185.00	231.00	214.00	901.00
40	Na %	Min	37.00	36.00	51.00	40.00	32.00	33.00	44.00	28.00	23.00	42.00
	(Sodium Percentage)	Max	47.00	43.00	68.00	49.00	59.00	52.00	54.00	46.00	39.00	72.00
41	SAR	Min	1.00	1.10	2.30	1.50	1.10	1.20	1.80	1.10	0.60	3.50
	(Sodium Adsorption Ratio)	Max	1.90	1.60	5.90	2.40	3.00	2.40	3.10	2.70	1.90	14.50
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.20	0.10	1.30	0.50	0.40	0.50	0.70	0.00	0.00	0.00

Source: Water Quality Year Book (Cauvery Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VI Basin : Cauvery

Sl. No.	Parameter	Site name	Kodumudi	Savandapur	Thengumarahada	Gandhavayal	Nellithurai	Urachikottai	Thevur	Sevanur	Thoppur	Kudlur
		River/Stream	Cauvery	Bhavani	Moyar	Gandhayar	Bhavani	Cauvery	Sarabenga	Chittar	Thoppaiyar	Palar
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1	Q(Cumecs)	Min	0.00	2.30	1.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max	903.00	138.00	38.30	36.77	647.80	565.90	5.80	22.97	3.98	21.29
2	Temperature	Min	24.00	26.50	20.00	20.00	17.50	27.00	26.00	25.00	24.00	23.00
	(^{o}C)	Max	30.00	31.50	26.00	26.00	25.50	32.50	29.00	29.00	24.00	23.00
3	pH_GEN	Min	7.40	7.50	7.10	7.50	7.40	7.70	7.80	7.70	8.10	8.50
	(Negative logarithm of hydrogen iron concentration)	Max	8.40	8.10	8.20	8.80	8.90	8.70	8.20	8.10	8.10	8.50
4	Specific	Min	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	3.80	2.20	0.70	1.10	0.50	1.90	4.70	7.00	6.20	5.40
	(K)	Max	13.50	6.20	3.30	5.30	5.10	5.50	8.00	8.70	6.20	5.40
6	Sodium	Min	25.10	15.00	3.20	6.70	3.70	13.70	81.00	35.70	38.20	60.00
	(Na)	Max	96.50	34.40	9.90	18.50	26.40	44.00	95.50	67.00	38.20	60.00
7	Calcium	Min	22.00	11.00	13.00	9.00	5.00	14.00	25.00	24.00	32.00	21.00
	(Ca)	Max	49.00	52.00	36.00	53.00	27.00	39.00	47.00	44.00	32.00	21.00
8	Magnesium	Min	14.40	4.80	1.90	2.90	1.00	1.90	31.60	30.70	28.70	34.50
	(Mg)	Max	47.90	36.40	10.50	38.10	14.40	31.60	75.70	59.40	28.70	34.50
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	(Fe)	Max	0.07	0.04	0.15	0.14	0.22	0.05	0.03	0.03	0.02	0.02
11	Ammonia	Min	0.00	0.00	0.03	0.00	0.00	0.00	0.09	0.10	0.10	0.09
	(NH_3-N)	Max	0.88	0.73	0.51	0.39	0.38	0.71	0.65	0.43	0.10	0.09
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.60
	(CO_3)	Max	41.10	0.00	0.00	17.90	18.40	36.80	0.00	0.00	0.00	27.60
13	Bicarbonate	Min	137.00	71.00	14.00	9.00	14.00	28.00	336.00	266.00	191.00	219.00
	(HCO_3)	Max	322.00	248.00	71.00	269.00	117.00	201.00	383.00	383.00	191.00	219.00
14	Chloride	Min	32.90	21.30	14.20	9.60	5.50	21.30	59.60	48.10	50.00	34.60
	(CL)	Max	101.70	48.10	63.70	34.60	36.60	51.90	147.40	63.50	50.00	34.60
15	Fluoride (F)	Min	0.48	0.20	0.01	0.05	0.00	0.44	0.69	0.54	0.59	0.97
	(F)	Max	0.81	0.48	0.12	0.22	0.31	0.62	1.16	0.69	0.59	0.97
16	Sulphate	Min	10.20	8.00	2.10	4.70	3.50	4.90	14.30	10.20	29.70	25.70
	(SO_4)	Max	72.20	32.30	11.80	23.30	20.20	38.20	92.00	38.20	29.70	25.70
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	1.47	1.21	1.25	1.43	0.52	1.07	3.24	6.10	9.28	10.10
	(NO_3-N)	Max	8.69	7.21	3.99	7.10	5.71	7.30	8.72	12.00	9.28	10.10
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
	(NO_2-N)	Max	0.36	0.45	0.10	0.05	0.02	0.15	0.03	0.12	0.01	0.00
20	Phosphate	Min	0.03	0.01	0.01	0.01	0.00	0.03	0.02	0.04	0.39	0.20
	(PO_4)	Max	0.37	0.30	0.35	0.15	0.29	0.27	0.19	0.31	0.39	0.20
21	Silica	Min	12.10	10.60	2.70	8.70	3.60	12.10	13.80	21.60	5.70	5.60
	(Sio_2)	Max	28.00	25.30	16.60	39.10	17.30	21.10	29.90	40.10	5.70	5.60

Source: Water Quality Year Book (Cauvery Basin) , 2015-16

contd...

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VI Basin : Cauvery

Sl. No.	Parameter	Site name	Kodumudi	Savandapur	Thengumarahada	Gandhavayal	Nellithurai	Urachikottai	Thevur	Sevanur	Thoppur	Kudlur
		River/Stream	Cauvery	Bhavani	Moyar	Gandhayar	Bhavani	Cauvery	Sarabenga	Chittar	Thoppaiyar	Palar
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
22	DO	Min	4.30	3.80	6.20	0.00	5.50	6.80	-	-	-	7.70
	(Dissolved Oxygen)	Max	6.80	9.10	7.60	0.00	8.20	7.40	-	-	-	7.70
23	BOD3-27	Min	1.20	1.10	0.40	-	0.20	2.20	-	-	-	1.90
	(Biochemical Oxygen Demand)	Max	5.10	4.30	2.70	-	2.30	5.60	-	-	-	1.90
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	0.00	0.00	0.01	0.00	0.00	0.02	0.10	0.04	0.01	0.04
	(B)	Max	0.17	0.17	0.09	0.09	0.08	0.17	0.18	0.11	0.01	0.04
31	Cadmium	Min	-	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	124.00	64.00	40.00	36.00	16.00	44.00	250.00	238.00	199.00	195.00
	(HAR _ Total)	Max	279.00	235.00	110.00	249.00	123.00	199.00	406.00	319.00	199.00	195.00
40	Na %	Min	27.00	19.00	13.00	13.00	25.00	25.00	31.00	24.00	29.00	39.00
	(Sodium Percentage)	Max	45.00	33.00	21.00	29.00	38.00	39.00	43.00	33.00	29.00	39.00
41	SAR	Min	1.00	0.70	0.20	0.40	0.40	0.90	1.80	1.00	1.20	1.90
	(Sodium Adsorption Ratio)	Max	2.50	1.10	0.40	0.60	1.00	1.40	2.50	1.70	1.20	1.90
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70
	(Residual Sodium Carbonate)	Max	0.40	0.00	0.00	0.00	0.00	0.00	0.90	0.40	0.00	0.70

Source: Water Quality Year Book (Cauvery Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VI Basin : Cauvery

Sl. No.	Parameter	Site name	Hogenakkal	Biligundulu	T. Bekuppe	T. K. Halli	Kollegal	Bendrahalli	T. Narasipur	Muthankera	K. M. Vadi	Akkihebbal
		River/Stream	Chinnar	Cauvery	Arkavathi	Shimsha	Cauvery	Suvarnavathi	Kabini	Kabini	Lakshmanthirtha	Hemavathi
(1)	(2)	(3)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
1	Q(Cumecs)	Min	Water samples were not collected during the Water Year 2015-2016.	5.47	2.56	0.00	0.00	0.00	0.00	0.75	0.00	0.00
	(Discharge in cubic m/s)	Max		1061.00	30.36	449.20	806.80	17.83	388.40	792.70	352.70	159.20
2	Temperature	Min		27.00	23.00	25.00	24.00	16.50	23.50	24.50	23.50	22.00
	(^{o}C)	Max		29.00	27.00	30.00	28.00	25.00	26.50	28.50	25.50	31.00
3	pH_GEN	Min		7.70	7.10	7.60	7.40	7.30	7.40	6.00	6.90	7.10
	(Negative logarithm of hydrogen iron concentration)	Max		8.40	8.20	8.30	8.20	7.90	8.20	7.90	7.80	8.10
4	Specific	Min		-	-	-	-	-	-	-	-	-
	Conductance	Max		-	-	-	-	-	-	-	-	-
5	Potassium	Min		1.50	12.20	2.00	1.40	3.30	1.40	0.20	1.90	1.10
	(K)	Max		4.00	17.80	4.30	2.40	5.80	2.70	0.50	2.70	3.50
6	Sodium	Min		7.30	129.60	47.00	6.40	36.10	6.50	12.60	8.10	8.80
	(Na)	Max		58.00	169.10	65.30	30.70	87.80	40.00	16.60	46.60	25.80
7	Calcium	Min		14.00	64.00	27.00	16.00	22.00	11.00	6.00	16.00	24.00
	(Ca)	Max		48.00	110.00	50.00	46.00	69.00	43.00	11.00	43.00	42.00
8	Magnesium	Min		6.80	18.50	17.50	1.00	11.70	5.80	1.90	4.90	10.70
	(Mg)	Max		26.20	44.70	31.10	21.40	20.40	27.20	7.80	31.10	23.30
9	Aluminium	Min		-	-	-	-	-	-	-	-	-
	(Al)	Max		-	-	-	-	-	-	-	-	-
10	Iron	Min		0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.10	0.00
	(Fe)	Max		0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.50	0.20
11	Ammonia	Min		-	-	-	-	-	-	-	-	-
	(NH_3-N)	Max		-	-	-	-	-	-	-	-	-
12	Carbonate	Min		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max		28.50	0.00	21.60	0.00	0.00	0.00	0.00	0.00	0.00
13	Bicarbonate	Min		66.00	299.00	260.00	64.00	164.00	60.00	10.00	55.00	124.00
	(HCO_3)	Max		287.00	523.00	350.00	263.00	432.00	325.00	50.00	363.00	236.00
14	Chloride	Min		15.30	158.00	29.10	11.00	29.50	11.00	6.50	18.80	16.70
	(CL)	Max		67.80	218.30	49.70	33.40	43.70	23.40	19.60	27.00	33.00
15	Fluoride (F)	Min		0.13	0.42	0.46	0.13	0.29	0.29	-	0.11	0.19
	(F)	Max		0.59	0.84	1.03	0.48	0.65	0.57	-	0.57	0.44
16	Sulphate	Min		3.40	17.80	12.10	6.20	7.10	3.40	-	3.50	3.80
	(SO_4)	Max		20.20	49.30	43.00	10.20	29.30	8.30	-	6.70	9.10
17	Sulphite	Min		-	-	-	-	-	-	-	-	-
	(SO_3)	Max		-	-	-	-	-	-	-	-	-
18	Nitrate	Min		0.41	3.52	0.46	0.56	1.18	0.06	-	0.70	0.29
	(NO_3-N)	Max		1.63	16.80	1.40	1.68	3.57	1.67	-	1.18	1.72
19	Nitrite	Min		0.00	0.12	0.00	0.00	0.01	0.00	-	0.00	0.00
	(NO_2-N)	Max		0.10	3.26	0.06	0.04	0.30	0.18	-	0.06	0.15
20	Phosphate	Min		0.00	0.30	0.01	0.04	0.10	0.01	-	0.02	0.00
	(PO_4)	Max		0.57	5.41	0.55	0.49	0.59	0.55	-	0.57	0.30
21	Silica	Min		10.20	27.00	20.40	13.00	20.10	9.80	-	13.00	16.30
	(Sio_2)	Max		30.80	68.60	25.60	26.10	49.20	31.90	-	31.40	45.20

Source: Water Quality Year Book (Cauvery Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VI Basin : Cauvery

Sl. No.	Parameter	Site name	Hogenakkal	Biligundulu	T. Bekuppe	T. K. Halli	Kollegal	Bendrahalli	T. Narasipur	Muthankera	K. M. Vadi	Akkihebbal
		River/Stream	Chinnar	Cauvery	Arkavathi	Shimsha	Cauvery	Suvarnavathi	Kabini	Kabini	Lakshmanthirtha	Hemavathi
(1)	(2)	(3)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	31	(32)	(33)
22	DO	Min	Water samples were not collected during the Water Year 2015-2016.	5.70	1.80	3.40	4.90	-	4.80	5.60	-	2.00
	(Dissolved Oxygen)	Max		8.50	4.60	7.70	7.30	-	7.50	7.80	-	7.80
23	BOD3-27	Min		0.80	5.90	0.60	0.40	-	0.40	0.40	-	0.40
	(Biochemical Oxygen Demand)	Max		2.60	13.90	1.40	1.60	-	1.80	1.80	-	1.40
24	Total Coliform	Min		-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max		-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min		-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max		-	-	-	-	-	-	-	-	-
26	Total plate count	Min		-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max		-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min		-	-	-	-	-	-	-	-	-
	(No. per ml)	Max		-	-	-	-	-	-	-	-	-
28	Zooplankton	Min		-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max		-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min		0.50	0.90	-	-	-	-	-	-	0.40
	(As)	Max		5.80	7.00	-	-	-	-	-	-	3.60
30	Boron (ppm)	Min		0.09	0.10	0.10	0.04	0.11	0.05	-	-	0.05
	(B)	Max		1.86	2.09	1.89	1.97	1.90	1.80	-	-	1.45
31	Cadmium	Min		0.00	0.00	-	-	-	-	-	-	0.00
	(Cd)	Max		0.00	0.00	-	-	-	-	-	-	0.00
32	Chromium	Min		0.00	0.60	-	-	-	-	-	-	0.10
	(Cr)	Max		0.60	0.70	-	-	-	-	-	-	0.60
33	Copper	Min		0.10	0.20	-	-	-	-	-	-	0.30
	(Cu)	Max		0.60	0.80	-	-	-	-	-	-	0.50
34	Cyanide	Min		-	-	-	-	-	-	-	-	-
	(Cn)	Max		-	-	-	-	-	-	-	-	-
35	Lead	Min		2.60	11.80	-	-	-	-	-	-	0.60
	(Pb)	Max		2.60	11.80	-	-	-	-	-	-	0.60
36	Manganese	Min		-	-	-	-	-	-	-	-	-
	(Mn)	Max		-	-	-	-	-	-	-	-	-
37	Mercury	Min		-	-	-	-	-	-	-	-	-
	(Hg)	Max		-	-	-	-	-	-	-	-	-
38	Zinc	Min		0.40	1.40	-	-	-	-	-	-	3.10
	(Zn)	Max		4.60	8.10	-	-	-	-	-	-	5.90
39	Total Hardness	Min		64.00	269.00	189.00	56.00	105.00	52.00	24.00	60.00	105.00
	(HAR _ Total)	Max		209.00	426.00	225.00	189.00	257.00	221.00	48.00	238.00	177.00
40	Na %	Min		18.00	42.00	33.00	19.00	36.00	20.00	43.00	18.00	15.00
	(Sodium Percentage)	Max		40.00	50.00	40.00	26.00	42.00	28.00	54.00	30.00	25.00
41	SAR	Min		0.40	3.00	1.50	0.40	1.50	0.40	1.00	0.40	0.40
	(Sodium Adsorption Ratio)	Max		1.80	3.90	2.00	1.00	2.40	1.20	1.10	1.30	0.90
42	RSC	Min		0.00	0.00	0.20	0.00	0.60	0.00	-	0.00	0.00
	(Residual Sodium Carbonate)	Max		1.10	1.60	1.40	0.60	2.00	0.90	-	1.20	0.40

Source: Water Quality Year Book (Cauvery Basin) , 2015-16

contd...

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VI Basin : Cauvery

Sl. No.	Parameter	Site name	M. H. Halli	Thimmanahalli	Sakaleshpur	Chunchunkatte	Kudige
		River/Stream	Hemavathi	Yagachi	Hemavathi	Cauvery	Cauvery
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)
1	Q(Cumecs)	Min	0.00	0.00	0.10	0.00	0.26
	(Discharge in cubic m/s)	Max	174.50	35.01	360.20	483.20	918.20
2	Temperature	Min	26.00	22.00	23.00	23.00	22.00
	(°C)	Max	27.00	28.00	28.00	24.50	31.00
3	pH_GEN	Min	6.70	7.20	6.90	7.40	7.30
	(Negative logarithm of hydrogen	Max	6.90	8.00	7.50	8.00	7.80
4	Specific	Min	-	-	-	-	-
	Conductance	Max	-	-	-	-	-
5	Potassium	Min	1.40	1.60	1.00	0.90	0.70
	(K)	Max	1.50	4.40	2.10	1.30	1.50
6	Sodium	Min	6.10	12.50	2.30	3.80	4.20
	(Na)	Max	7.10	23.70	14.30	9.50	7.90
7	Calcium	Min	14.00	14.00	5.00	8.00	6.00
	(Ca)	Max	18.00	32.00	10.00	30.00	16.00
8	Magnesium	Min	4.90	4.90	1.00	3.90	3.40
	(Mg)	Max	8.70	9.70	5.80	7.80	7.80
9	Aluminium	Min	-	-	-	-	-
	(Al)	Max	-	-	-	-	-
10	Iron	Min	0.00	0.00	0.00	0.10	0.10
	(Fe)	Max	0.20	0.50	0.40	0.20	0.20
11	Ammonia	Min	-	-	0.00	-	-
	(NH_3-N)	Max	-	-	0.00	-	-
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	0.00	0.00	0.00	0.00	0.00
13	Bicarbonate	Min	60.00	76.00	13.00	35.00	31.00
	(HCO_3)	Max	81.00	146.00	46.00	125.00	70.00
14	Chloride	Min	9.60	21.70	4.30	11.00	6.00
	(CL)	Max	18.10	40.10	22.70	16.70	21.30
15	Fluoride (F)	Min	0.15	0.15	0.04	0.08	0.04
	(F)	Max	0.29	0.44	0.80	0.25	0.11
16	Sulphate	Min	3.50	2.90	1.40	2.90	1.70
	(SO_4)	Max	3.70	13.30	4.20	3.90	3.40
17	Sulphite	Min	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-
18	Nitrate	Min	0.53	0.34	0.43	0.41	0.50
	(NO_3-N)	Max	0.74	1.18	1.06	0.88	1.06
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.06	0.01	0.01	0.01	0.06
20	Phosphate	Min	0.00	0.00	0.00	0.03	0.00
	(PO_4)	Max	0.90	0.24	0.24	0.33	0.39
21	Silica	Min	14.30	11.10	9.30	12.70	8.10
	(Sio_2)	Max	30.70	20.00	18.60	20.80	23.50

Source: Water Quality Year Book (Cauvery Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VI Basin : Cauvery

Sl. No.	Parameter	Site name	M. H. Halli	Thimmanahalli	Sakaleshpur	Chunchunkatte	Kudige
		River/Stream	Hemavathi	Yagachi	Hemavathi	Cauvery	Cauvery
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)
22	DO	Min	3.00	-	5.20	-	5.00
	(Dissolved Oxygen)	Max	5.40	-	7.30	-	7.60
23	BOD3-27	Min	0.70	-	0.40	-	0.20
	(Biochemical Oxygen Demand)	Max	1.10	-	2.60	-	1.20
24	Total Coliform	Min	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-
29	Arsenic (ppm)	Min	-	1.00	6.00	-	4.10
	(As)	Max	-	1.00	6.00	-	4.10
30	Boron (ppm)	Min	0.18	0.02	0.02	-	0.05
	(B)	Max	1.67	0.41	1.67	-	1.44
31	Cadmium	Min	-	0.00	-	-	-
	(Cd)	Max	-	0.00	-	-	-
32	Chromium	Min	-	0.00	0.40	-	0.90
	(Cr)	Max	-	0.00	0.40	-	0.90
33	Copper	Min	-	0.50	4.30	-	0.90
	(Cu)	Max	-	0.50	4.30	-	0.90
34	Cyanide	Min	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-
35	Lead	Min	-	0.60	-	-	-
	(Pb)	Max	-	0.60	-	-	-
36	Manganese	Min	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-
38	Zinc	Min	-	1.20	4.90	-	3.90
	(Zn)	Max	-	1.20	4.90	-	3.90
39	Total Hardness	Min	60.00	68.00	16.00	36.00	28.00
	(HAR _ Total)	Max	72.00	112.00	40.00	100.00	64.00
40	Na %	Min	17.00	26.00	21.00	14.00	18.00
	(Sodium Percentage)	Max	19.00	32.00	45.00	22.00	25.00
41	SAR	Min	0.30	0.70	0.30	0.30	0.30
	(Sodium Adsorption Ratio)	Max	0.40	1.00	1.00	0.50	0.40
42	RSC	Min	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.10	0.20	0.00	0.10	0.00

Source: Water Quality Year Book (Cauvery Basin) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VII Basin : Pennar

Sl. No.	Parameter	Site name	Nellore	Nandipalli	Chennur	Kamalapuram	Alladupalli
		River/Stream	Pennar	Sagileru	Pennar	papagni	Kunderu
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Q(Cumecs)	Min	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max	1388.00	136.30	487.80	60.32	257.90
2	Temperature	Min	24.00	25.50	23.00	22.50	26.00
	(^{o}C)	Max	27.00	26.00	28.00	28.50	33.00
3	pH_GEN	Min	7.20	7.60	7.30	7.80	7.30
	(Negative logarithm of hydrogen		8.00	7.80	8.10	8.30	8.00
	iron concentration)	Max					
4	Specific	Min	-	-	-	-	-
	Conductance	Max	-	-	-	-	-
5	Potassium	Min	2.20	2.40	2.40	1.70	3.60
	(K)	Max	3.70	3.40	6.80	3.00	9.00
6	Sodium	Min	21.00	25.50	23.20	22.90	119.00
	(Na)	Max	66.60	55.90	240.00	49.40	254.00
7	Calcium	Min	11.00	12.00	20.00	11.00	24.00
	(Ca)	Max	31.00	24.00	61.00	28.00	71.00
8	Magnesium	Min	4.90	7.30	8.10	5.70	11.40
	(Mg)	Max	11.40	15.40	35.00	16.20	39.70
9	Aluminium	Min	-	-	-	-	-
	(Al)	Max	-	-	-	-	-
10	Iron	Min	0.00	-	0.00	-	0.00
	(Fe)	Max	0.00	-	0.00	-	0.00
11	Ammonia	Min	0.03	0.02	0.03	0.02	0.02
	(NH_3-N)	Max	0.07	0.04	0.11	0.05	0.12
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	0.00	0.00	0.00	11.00	0.00
13	Bicarbonate	Min	56.00	75.00	98.00	69.00	109.00
	(HCO_3)	Max	151.00	157.00	258.00	157.00	293.00
14	Chloride	Min	27.50	33.00	30.00	30.30	154.20
	(CL)	Max	88.10	66.10	331.80	66.10	337.50
15	Fluoride (F)	Min	0.25	0.48	0.58	0.44	0.62
	(F)	Max	0.39	0.49	0.82	0.88	0.88
16	Sulphate	Min	14.20	10.10	9.80	8.10	85.60
	(SO_4)	Max	45.90	45.30	208.20	22.50	212.50
17	Sulphite	Min	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-
18	Nitrate	Min	0.19	0.33	0.25	0.28	0.26
	(NO_3-N)	Max	0.25	2.10	1.80	0.59	2.68
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.00	0.00	0.00	0.01	0.06
20	Phosphate	Min	0.00	0.01	0.00	0.01	0.00
	(PO_4)	Max	0.01	0.02	0.06	0.02	0.11
21	Silica	Min	-	-	-	-	-
	(Sio_2)	Max	-	-	-	-	-

Source: Water Quality Year Book (East Flowing Rivers from Mahanadi to Kanyakumari) , 2015-16

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Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VII Basin : Pennar

Sl. No.	Parameter	Site name	Nellore	Nandipalli	Chennur	Kamalapuram	Alladupalli
		River/Stream	Pennar	Sagileru	Pennar	papagni	Kunderu
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
22	DO	Min	4.90	5.60	5.90	-	5.10
	(Dissolved Oxygen)	Max	6.50	6.90	7.10	-	7.30
23	BOD3-27	Min	0.60	1.80	0.70	2.20	0.90
	(Biochemical Oxygen Demand)	Max	2.40	2.40	2.90	2.70	2.60
24	Total Coliform	Min	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-
29	Arsenic (ppm)	Min	1.70	-	1.67	-	1.17
	(As)	Max	1.70	-	1.67	-	1.17
30	Boron (ppm)	Min	-	-	-	-	-
	(B)	Max	-	-	-	-	-
31	Cadmium	Min	0.28	-	0.68	-	0.52
	(Cd)	Max	0.28	-	0.68	-	0.52
32	Chromium	Min	1.01	-	0.43	-	0.33
	(Cr)	Max	1.01	-	0.43	-	0.33
33	Copper	Min	3.39	-	2.44	-	3.07
	(Cu)	Max	3.39	-	2.44	-	3.07
34	Cyanide	Min	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-
35	Lead	Min	0.46	-	1.46	-	0.46
	(Pb)	Max	0.46	-	1.46	-	0.46
36	Manganese	Min	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-
37	Mercury	Min	0.00	-	0.00	-	0.00
	(Hg)	Max	0.00	-	0.00	-	0.00
38	Zinc	Min	6.50	-	4.80	-	4.40
	(Zn)	Max	6.50	-	4.80	-	4.40
39	Total Hardness	Min	47.00	60.00	84.00	50.00	107.00
	(HAR _ Total)	Max	124.00	124.00	298.00	138.00	343.00
40	Na %	Min	48.00	47.00	37.00	43.00	55.00
	(Sodium Percentage)	Max	53.00	49.00	73.00	49.00	73.00
41	SAR	Min	1.30	1.40	1.10	1.30	3.80
	(Sodium Adsorption Ratio)	Max	2.60	2.20	7.80	1.80	7.90
42	RSC	Min	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.00	0.10	0.00	0.20	0.00

Source: Water Quality Year Book (East Flowing Rivers from Mahanadi to Kanyakumari) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VIII Basin : East Flowing Rivers From Mahanadi to Pennar

Sl. No.	Parameter	Site name	Kashi Nagar	Purushottampur	Srikakulam	Gunupur	Marella
		River/Stream	Vamsadhara	Rushikulya	Nagavali	Vamsadhara	Gundlakamma
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Q(Cumecs)	Min	-	-	-	-	0.00
	(Discharge in cubic m/s)	Max	-	-	-	-	18.80
2	Temperature	Min	21.00	18.00	25.00	17.50	26.00
	(°C)	Max	29.00	31.00	31.00	28.00	28.50
3	pH_GEN	Min	7.20	7.00	7.40	7.20	7.70
	(Negative logarithm of hydrogen iron concentration)	Max	8.40	8.30	8.40	8.40	8.20
4	Specific	Min	-	-	-	-	-
	Conductance	Max	-	-	-	-	-
5	Potassium	Min	2.40	1.20	1.10	2.40	9.00
	(K)	Max	3.40	3.50	4.00	8.00	16.70
6	Sodium	Min	3.90	1.80	2.90	4.00	221.70
	(Na)	Max	24.80	53.00	18.30	27.20	249.30
7	Calcium	Min	18.00	19.00	21.00	18.00	38.00
	(Ca)	Max	26.00	29.00	30.00	27.00	38.00
8	Magnesium	Min	9.70	10.70	11.70	8.80	21.40
	(Mg)	Max	14.60	13.60	14.60	14.60	21.80
9	Aluminium	Min	-	-	-	-	-
	(Al)	Max	-	-	-	-	-
10	Iron	Min	0.40	0.20	0.30	0.30	0.00
	(Fe)	Max	0.60	0.60	0.60	0.60	0.00
11	Ammonia						
	(NH_3-N)	Min	-	-	-	-	0.00
	(NH_3-N)	Max	-	-	-	-	0.08
12	Carbonate						
	(CO3)	Min	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	55.40	55.40	27.70	22.20	0.00
13	Bicarbonate						
	(HCO_3)	Min	73.00	79.00	79.00	62.00	383.00
	(HCO_3)	Max	259.00	130.00	118.00	118.00	394.00
14	Chloride	Min	11.30	13.20	11.30	9.40	148.70
	(CL)	Max	17.00	20.80	22.60	18.90	182.30
15	Fluoride (F)	Min	0.05	0.05	0.05	0.05	1.34
	(F)	Max	0.05	0.05	0.05	0.05	1.92
16	Sulphate	Min	2.70	1.20	4.80	1.50	106.00
	(SO_4)	Max	20.80	18.40	20.80	19.30	126.00
17	Sulphite	Min	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-
18	Nitrate						
	(NO_3-N)	Min	0.70	0.67	1.05	0.81	0.79
	(NO_3-N)	Max	1.05	1.22	1.29	1.09	1.21
19	Nitrite						
	(NO_2-N)	Min	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.03	0.03	0.03	0.03	0.01
20	Phosphate						
	(pO_4)	Min	-	-	-	-	0.17
	(PO_4)	Max	-	-	-	-	0.27
21	Silica	Min	5.00	5.00	5.00	5.00	15.10
	(Sio_2)	Max	6.00	8.00	6.00	6.00	20.60

Source: Water Quality Year Book (Rushikulya , Vamsadhara, Sarada & Nagavali Basins), 2015-16

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

VIII Basin : East Flowing Rivers From Mahanadi to Pennar

Sl. No.	Parameter	Site name	Kashi Nagar	Purushottampur	Srikakulam	Gunupur	Marella
		River/Stream	Vamsadhara	Rushikulya	Nagavali	Vamsadhara	Gundlakamma
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
22	DO	Min	-	-	-	-	3.60
	(Dissolved Oxygen)	Max	-	-	-	-	5.80
23	BOD3-27	Min	-	-	-	-	1.30
	(Biochemical Oxygen Demand)	Max	-	-	-	-	1.40
24	Total Coliform	Min	-	-	-	-	2800.00
	(No. per 100 ml)	Max	-	-	-	-	16000.00
25	Faecal Coliform	Min	-	-	-	-	260.00
	(No. per 100 ml)	Max	-	-	-	-	800.00
26	Total plate count	Min	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-
	(As)	Max	-	-	-	-	-
30	Boron (ppm)	Min	0.00	0.01	0.00	0.01	-
	(B)	Max	0.01	0.01	0.01	0.02	-
31	Cadmium	Min	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-
33	Copper	Min	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-
35	Lead	Min	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-
39	Total Hardness	Min	85.00	93.00	101.00	81.00	185.00
	(HAR _ Total)	Max	117.00	129.00	129.00	129.00	187.00
40	Na %	Min	8.00	3.00	5.00	9.00	71.00
		Max	34.00	47.00	25.00	37.00	72.00
41	SAR	Min	0.20	0.10	0.10	0.20	7.10
		Max	1.10	2.00	0.70	1.20	8.00
42	RSC	Min	0.00	0.00	0.00	0.00	2.60
		Max	4.10	1.00	0.00	0.00	2.80

Source: Water Quality Year Book (Rushikulya , Vamsadhara, Sarada & Nagavali Basins), 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IX Basin : East Flowing Rivers from Pennar to Kanyakumari

Sl. No.	Parameter	Site name	Gummanur	Kudalaiyathur	Paramakudi	Theni	Ambasamudram	Murappanadu	A.P.Puram	Naidupeta	Sulurpet	Chengalpet	Vazhavachanur
		River/Stream	Ponnaiyar	Vellar	Vaigai	Suruliyar	Vaigai	Thambraparani	Chittar	Swarnamukhi	Kalingi	Palar	Ponnaiyar
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)
1	Q(Cumecs)	Min	0.00	0.00	0.00	0.00	0.00	1.85	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max	125.40	997.30	41.55	162.10	56.95	428.40	67.53	1100.00	874.50	2657.00	184.20
2	Temperature	Min	21.00	24.00	7.90	22.50	24.00	26.00	23.50	24.00	25.50	24.00	25.00
	(^{o}C)	Max	29.00	24.00	7.90	27.00	25.00	30.50	28.50	27.00	27.00	28.00	32.00
3	pH_GEN	Min	7.60	7.70	25.00	7.30	7.40	6.80	7.50	7.40	7.60	7.40	7.20
	(Negative logarithm of hydrogen iron concentration)	Max	8.50	8.00	25.00	8.10	9.00	8.00	8.20	8.00	8.10	8.50	8.40
4	Specific	Min	-	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	16.70	2.60	6.90	1.40	2.70	1.70	5.40	2.20	1.80	3.00	2.70
	(K)	Max	24.20	3.10	6.90	6.70	4.40	8.60	11.90	3.40	2.00	6.30	6.70
6	Sodium	Min	94.50	25.00	26.60	4.40	7.80	9.50	58.10	19.10	18.10	16.90	56.60
	(Na)	Max	156.00	32.00	26.60	34.80	15.40	32.50	454.00	64.00	20.90	72.40	163.00
7	Calcium	Min	37.00	16.00	30.00	6.00	9.00	9.00	39.00	13.00	16.00	11.00	28.00
	(Ca)	Max	118.00	27.00	30.00	28.00	22.00	33.00	178.00	52.00	17.00	43.00	55.00
8	Magnesium	Min	15.30	7.30	13.40	1.90	1.90	2.90	17.20	4.90	4.90	5.70	10.50
	(Mg)	Max	53.90	10.50	13.40	41.40	10.50	15.50	132.80	21.10	4.90	22.70	33.10
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.00	-	0.02	0.00	0.00	0.00	0.00	-	-	-	-
	(Fe)	Max	0.07	-	0.02	0.17	0.12	0.07	0.05	-	-	-	-
11	Ammonia	Min	0.01	0.04	0.09	0.00	0.18	0.00	0.00	0.04	0.04	0.04	0.03
	(NH_3-N)	Max	0.55	0.04	0.09	0.47	0.68	0.38	0.65	0.08	0.05	0.07	0.12
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	40.40	0.00	0.00	0.00	13.80	0.00	0.00	0.00	0.00	11.30	16.90
13	Bicarbonate	Min	260.00	95.00	145.00	19.00	28.00	27.00	149.00	73.00	67.00	56.00	109.00
	(HCO_3)	Max	360.00	140.00	145.00	237.00	75.00	126.00	418.00	253.00	73.00	161.00	308.00
14	Chloride	Min	144.30	33.00	36.60	8.10	11.50	12.70	109.60	27.50	24.80	24.80	88.10
	(CL)	Max	212.90	44.10	36.60	46.80	20.80	55.80	866.00	93.60	27.50	115.10	226.90
15	Fluoride (F)	Min	0.44	0.29	0.36	0.12	0.20	0.08	0.50	0.21	0.29	0.21	0.30
	(F)	Max	0.61	0.33	0.36	0.67	0.36	0.35	1.55	0.35	0.30	0.36	0.67
16	Sulphate	Min	22.00	13.80	15.90	4.20	8.40	5.60	30.50	8.70	9.10	9.00	18.60
	(SO_4)	Max	34.60	21.90	15.90	16.30	16.00	18.50	244.20	30.50	12.90	32.80	55.70
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	20.00	0.24	3.61	0.75	1.40	0.91	2.59	0.18	0.19	0.23	0.36
	(NO_3-N)	Max	31.00	0.27	3.61	3.59	3.54	4.11	9.76	0.57	0.24	0.75	1.14
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.15	0.00	0.00	0.16	0.02	0.05	0.19	0.01	0.00	0.00	0.00
20	Phosphate	Min	1.20	0.01	0.22	0.02	0.07	0.01	0.02	0.00	0.00	0.00	0.00
	(PO_4)	Max	2.55	0.02	0.22	0.10	0.13	0.23	0.25	0.07	0.01	0.04	0.10
21	Silica	Min	22.10	-	17.30	7.50	3.10	4.40	16.40	-	-	-	-
	(Sio_2)	Max	57.40	-	17.30	34.80	41.60	17.80	70.90	-	-	-	-

Source: Water Quality Year Book (East Flowing Rivers from Mahanadi to Kanyakumari) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IX Basin : East Flowing Rivers from Pennar to Kanyakumari

Sl. No.	Parameter	Site name	Gummanur	Kudalaiyathur	Paramakudi	Theni	Ambasamudram	Murappanadu	A.P.Puram	Naidupeta	Sulurpet	Chengalpet	Vazhavachanur
		River/Stream	Ponnaiyar	Vellar	Vaigai	Suruliyar	Vaigai	Thambraparani	Chittar	Swarnamukhi	Kalingi	Palar	Ponnaiyar
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)
22	DO	Min	6.70	-	-	1.30	6.90	4.50	-	6.20	5.70	-	4.30
	(Dissolved Oxygen)	Max	9.30	-	-	12.70	17.20	6.40	-	7.90	6.60	-	7.60
23	BOD3-27	Min	1.60	1.30	-	0.60	1.00	1.00	-	1.30	1.30	0.70	0.60
	(Biochemical Oxygen Demand)	Max	5.50	2.20	-	2.10	2.10	3.30	-	1.80	2.00	2.40	2.40
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	0.07	0.00	0.00	0.03	0.00	-	-	-	-
	(B)	Max	-	-	0.07	0.15	0.14	0.17	0.54	-	-	-	-
31	Cadmium	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	277.00	70.00	131.00	24.00	32.00	35.00	202.00	57.00	60.00	50.00	121.00
	(HAR _ Total)	Max	374.00	111.00	131.00	208.00	99.00	140.00	883.00	218.00	64.00	201.00	270.00
40	Na %	Min	36.00	38.00	29.00	21.00	25.00	30.00	36.00	39.00	39.00	31.00	44.00
	(Sodium Percentage)	Max	46.00	43.00	29.00	28.00	37.00	39.00	55.00	50.00	41.00	47.00	67.00
41	SAR	Min	2.20	1.30	1.00	0.40	0.60	0.70	1.70	1.10	1.00	0.90	2.20
	(Sodium Adsorption Ratio)	Max	3.50	1.30	1.00	1.10	0.80	1.20	6.80	2.10	1.10	2.20	5.40
42	RSC	Min	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.60

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IX Basin : East Flowing Rivers from Pennar to Kanyakumari

Sl. No.	Parameter	Site name	Magaral	Arcot	Avarankuppam	Kumarapalayam	Villupuram	Irukkankudi
		River/Stream	Cheyyar	Palar	Palar	Varahanadi	Ponnaiyar	Vaippar
(1)	(2)	(3)	(16)	(17)	(18)	(19)	(20)	(21)
1	Q(Cumecs)	Min	0.00	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max	1037.00	219.10	12.04	785.50	527.10	37.58
2	Temperature	Min	23.00	-	22.00	23.50	27.00	24.00
	(^{o}C)	Max	28.50	-	25.00	27.00	27.00	30.00
3	pH_GEN	Min	7.70	7.60	7.80	7.50	7.80	7.50
	(Negative logarithm of hydrogen		8.40	8.10	8.30	7.90	7.90	8.30
	iron concentration)	Max						
4	Specific	Min	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-
5	Potassium	Min	2.10	6.90	2.80	2.50	4.00	7.30
	(K)	Max	3.60	12.50	2.80	3.10	5.40	10.10
6	Sodium	Min	4.50	88.90	50.70	17.20	31.70	25.40
	(Na)	Max	33.80	170.00	80.90	30.10	56.70	37.60
7	Calcium	Min	8.00	39.00	30.00	17.00	27.00	25.00
	(Ca)	Max	33.00	65.00	41.00	23.00	39.00	41.00
8	Magnesium	Min	3.20	15.40	9.60	10.50	13.80	7.70
	(Mg)	Max	18.70	22.70	22.00	11.40	17.80	21.90
9	Aluminium	Min	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-
10	Iron	Min	-	-	0.00	-	-	0.00
	(Fe)	Max	-	-	0.05	-	-	0.05
11	Ammonia		0.04	0.04	0.07	0.04	0.04	0.02
	(NH_3-N)	Min						
	(NH_3-N)	Max	0.07	0.06	0.61	0.05	0.08	0.67
12	Carbonate							
	(CO3)	Min	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	16.90	0.00	36.80	0.00	0.00	23.00
13	Bicarbonate							
	(HCO_3)	Min	34.00	191.00	182.00	101.00	140.00	103.00
	(HCO_3)	Max	157.00	258.00	243.00	112.00	202.00	210.00
14	Chloride	Min	8.30	115.60	28.90	33.00	52.30	31.20
	(CL)	Max	58.90	278.30	43.40	46.80	96.40	36.40
15	Fluoride (F)	Min	0.14	0.35	0.60	0.26	0.30	0.18
	(F)	Max	0.38	0.42	0.86	0.27	0.39	0.35
16	Sulphate	Min	3.40	60.70	24.80	9.20	17.80	16.30
	(SO_4)	Max	20.40	69.60	42.50	13.60	24.40	20.00
17	Sulphite	Min	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-
18	Nitrate							
	(NO_3-N)	Min	0.20	0.39	2.63	0.36	0.38	1.76
	(NO_3-N)	Max	0.26	1.14	3.52	1.04	0.43	5.31
19	Nitrite							
	(NO_2-N)	Min	0.00	0.00	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.00	0.01	0.01	0.00	0.00	0.05
20	Phosphate							
	(pO_4)	Min	0.00	0.00	0.03	0.05	0.02	0.03
	(PO_4)	Max	0.02	0.01	0.10	0.09	0.02	0.22
21	Silica	Min	-	-	21.20	-	-	5.40
	(Sio_2)	Max	-	-	35.60	-	-	18.30

Source: Water Quality Year Book (East Flowing Rivers from Mahanadi to Kanyakumari) , 2015-16

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

IX Basin : East Flowing Rivers from Pennar to Kanyakumari

Sl. No.	Parameter	Site name	Magaral	Arcot	Avarankuppam	Kumarapalayam	Villupuram	Irukkankudi
		River/Stream	Cheyyar	Palar	Palar	Varahanadi	Ponnaiyar	Vaippar
(1)	(2)	(3)	(16)	(17)	(18)	(19)	(20)	(21)
22	DO	Min	-	-	-	-	-	-
	(Dissolved Oxygen)	Max	-	-	-	-	-	-
23	BOD3-27	Min	0.90	1.10	-	1.50	1.80	-
	(Biochemical Oxygen Demand)	Max	2.00	2.40	-	1.50	2.70	-
24	Total Coliform	Min	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-
27	Phytoplankton							
	(No.per ml)	Min	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	0.03	-	-	0.04
	(B)	Max	-	-	0.05	-	-	0.23
31	Cadmium	Min	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-
39	Total Hardness	Min	34.00	171.00	115.00	91.00	124.00	99.00
	(HAR _ Total)	Max	161.00	258.00	194.00	101.00	171.00	162.00
40	Na %	Min	21.00	52.00	47.00	26.00	35.00	27.00
	(Sodium Percentage)	Max	31.00	58.00	48.00	41.00	41.00	37.00
41	SAR	Min	0.30	3.00	2.10	0.70	1.20	0.90
	(Sodium Adsorption Ratio)	Max	1.20	4.60	2.50	1.40	1.90	1.40
42	RSC	Min	0.00	0.00	0.70	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.00	0.10	1.30	0.00	0.00	0.20

Source: Water Quality Year Book (East Flowing Rivers from Mahanadi to Kanyakumari) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

X Basin : Narmada

Sl. No.	Parameter	Site name	Chandwada	Garudeshwar	Pati	Dhulsar	Mandleshwar	Kogaon	Handia	Chhidgaon	Hoshangabad	Sandia
		River/Stream	Orsang	Narmada	Goi	Uri	Narmada	Kundi	Narmada	Ganjal	Narmada	Narmada
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Q(Cumecs)	Min	2.02	17.93	0.76	0.46	138.90	1.77	72.80	0.00	86.01	40.26
	(Discharge in cubic m/s)	Max	470.60	4805.00	98.99	184.40	2311.00	1274.00	5371.00	1004.00	2797.00	2982.00
2	Temperature	Min	20.00	16.00	16.00	26.00	15.00	24.00	20.90	19.00	12.00	16.00
	(^{o}C)	Max	25.00	26.00	28.00	28.00	24.00	30.50	31.00	30.00	28.50	29.00
3	pH_GEN	Min	8.20	7.90	8.10	8.10	8.10	8.30	8.20	7.80	7.70	8.10
	(Negative logarithm of hydrogen iron concentration)	Max	8.30	8.30	8.40	8.40	8.30	8.40	8.40	8.30	8.40	8.30
4	Specific	Min	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	3.60	3.00	0.80	2.40	1.60	1.50	1.30	1.00	1.10	1.10
	(K)	Max	4.20	4.60	3.90	5.00	3.00	2.60	3.90	3.50	4.40	3.70
6	Sodium	Min	40.40	35.00	15.30	15.60	8.20	17.10	6.50	9.60	6.20	4.40
	(Na)	Max	46.00	42.00	22.40	34.30	13.50	28.50	18.40	44.80	24.10	13.10
7	Calcium	Min	28.00	28.00	23.00	21.00	23.00	27.00	24.00	20.00	24.00	22.00
	(Ca)	Max	34.00	36.00	42.00	46.00	29.00	40.00	37.00	46.00	40.00	40.00
8	Magnesium	Min	7.30	4.90	16.80	10.20	9.00	19.00	9.70	7.80	10.00	6.10
	(Mg)	Max	12.20	12.20	29.70	26.50	13.90	24.10	16.80	26.00	22.10	19.70
9	Aluminium	Min	0.05	0.06	-	-	-	-	-	-	-	-
	(Al)	Max	0.08	0.10	-	-	-	-	-	-	-	-
10	Iron	Min	-	-	-	-	-	-	-	-	-	-
	(Fe)	Max	-	-	-	-	-	-	-	-	-	-
11	Ammonia		0.11	0.10	-	-	-	-	-	-	-	-
	(NH_3-N)	Min										
	(NH_3-N)	Max	0.13	0.13	-	-	-	-	-	-	-	-
12	Carbonate											
	(CO3)	Min	0.00	0.00	0.00	0.00	0.00	5.60	0.00	0.00	0.00	0.00
	(CO_3)	Max	0.00	0.00	8.40	8.40	5.60	8.40	11.20	5.60	8.40	5.60
13	Bicarbonate											
	(HCO_3)	Min	106.00	110.00	177.00	119.00	133.00	184.00	132.00	123.00	137.00	129.00
	(HCO_3)	Max	130.00	146.00	219.00	210.00	274.00	221.00	207.00	326.00	241.00	201.00
14	Chloride	Min	58.00	50.00	7.80	7.80	4.50	10.10	4.00	4.30	5.60	5.00
	(CL)	Max	80.00	70.00	21.00	13.60	10.50	25.00	11.30	20.70	14.00	10.00
15	Fluoride (F)	Min	0.13	0.12	0.06	0.35	0.16	0.22	0.02	0.03	0.07	0.10
	(F)	Max	0.14	0.15	0.76	0.74	0.70	0.74	0.72	0.71	0.58	0.62
16	Sulphate	Min	6.00	6.00	12.70	22.30	3.00	13.20	3.80	4.80	2.80	0.80
	(SO_4)	Max	9.00	11.00	27.20	29.20	28.80	29.80	28.60	27.60	20.10	21.40
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-
18	Nitrate											
	(NO_3-N)	Min	0.11	0.12	0.23	2.03	0.19	0.37	0.15	0.17	0.04	0.03
	(NO_3-N)	Max	0.14	0.14	12.65	4.65	2.61	4.64	3.06	1.33	3.19	3.53
19	Nitrite											
	(NO_2-N)	Min	0.06	0.04	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00
	(NO_2-N)	Max	0.10	0.08	0.08	0.10	0.16	0.03	0.04	0.06	0.04	0.03
20	Phosphate											
	(pO_4)	Min	0.12	0.12	0.00	0.12	0.00	0.09	0.00	0.01	0.02	0.02
	(PO_4)	Max	0.15	0.14	0.57	0.76	0.34	0.21	1.11	0.40	0.59	0.62
21	Silica	Min	8.00	6.00	23.50	30.50	11.50	22.30	11.40	10.50	9.20	8.20
	(Sio_2)	Max	10.00	12.00	33.20	39.90	22.00	29.60	26.70	37.30	21.60	19.90

Source: Water Quality Year Book (Narmada Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

X Basin : Narmada

Sl. No.	Parameter	Site name	Chandwada	Garudeshwar	Pati	Dhulsar	Mandleshwar	Kogaon	Handia	Chhidgaon	Hoshangabad	Sandia
		River/Stream	Orsang	Narmada	Goi	Uri	Narmada	Kundi	Narmada	Ganjal	Narmada	Narmada
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
22	DO	Min	6.80	7.50	5.10	4.50	5.40	5.80	4.90	3.40	4.10	5.00
	(Dissolved Oxygen)	Max	7.00	7.60	7.20	6.90	7.60	6.00	7.70	8.20	7.30	8.00
23	BOD3-27	Min	0.50	0.50	0.10	0.20	0.40	0.70	0.30	0.20	0.30	0.10
	(Biochemical Oxygen Demand)	Max	0.80	2.80	1.00	0.90	1.00	1.50	1.60	3.40	1.60	1.20
24	Total Coliform	Min	400.00	700.00	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	1100.00	1400.00	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	200.00	300.00	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	600.00	600.00	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton											
	(No.per ml)	Min	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(B)	Max	-	-	-	-	-	-	-	-	-	-
31	Cadmium	Min	-	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	116.00	101.00	150.00	95.00	99.00	155.00	105.00	83.00	101.00	96.00
	(HAR _ Total)	Max	130.00	131.00	182.00	196.00	125.00	185.00	160.00	206.00	165.00	157.00
40	Na %	Min	40.00	37.00	15.00	16.00	14.00	17.00	11.00	15.00	12.00	9.00
	(Sodium Percentage)	Max	44.00	44.00	22.00	31.00	20.00	27.00	22.00	35.00	25.00	16.00
41	SAR	Min	1.60	1.40	0.50	0.50	0.30	0.50	0.30	0.40	0.30	0.20
	(Sodium Adsorption Ratio)	Max	1.80	1.70	0.80	1.10	0.50	1.00	0.70	1.40	0.80	0.50
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.20	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.00	0.00	0.20	0.30	2.00	0.50	0.60	1.70	0.90	0.50

Source: Water Quality Year Book (Narmada Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

X Basin : Narmada

Sl. No.	Parameter	Site name	Gadarwara	Barman	Belkheri	Patan	Bamni	Mohgaon	Manot	Dindori
		River/Stream	Shakkar	Narmada	Sher	Hiran	Banjar	Burhner	Narmada	Narmada
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1	Q(Cumecs) (Discharge in cubic m/s)	Min	0.02	24.80	0.24	0.06	0.00	0.09	0.01	0.61
		Max	493.80	1881.00	451.40	380.50	301.20	1805.00	1178.00	908.90
2	Temperature (°C)	Min	17.50	19.00	21.00	18.00	12.00	18.00	18.00	15.00
		Max	27.00	29.00	32.00	31.50	29.00	29.50	29.00	27.00
3	pH_GEN (Negative logarithm of hydrogen iron concentration)	Min	8.00	8.00	7.70	7.80	7.80	7.70	7.70	7.70
		Max	8.50	8.40	8.30	8.40	8.30	8.30	8.30	8.20
4	Specific Conductance	Min	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-
5	Potassium (K)	Min	0.70	1.20	0.70	3.10	1.40	1.00	0.50	0.70
		Max	3.10	3.20	2.50	8.00	7.20	4.10	4.30	3.60
6	Sodium (Na)	Min	7.70	4.40	9.30	5.30	7.10	5.30	4.80	7.80
		Max	15.60	12.80	17.20	36.70	44.20	10.80	11.10	17.80
7	Calcium (Ca)	Min	22.00	24.00	28.00	21.00	11.00	16.00	20.00	20.00
		Max	39.00	35.00	46.00	59.00	34.00	30.00	30.00	37.00
8	Magnesium (Mg)	Min	11.70	6.80	10.70	2.90	4.90	5.40	4.60	8.80
		Max	24.10	15.30	35.70	28.00	17.50	17.00	19.00	17.30
9	Aluminium (Al)	Min	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-
10	Iron (Fe)	Min	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-
11	Ammonia (NH_3-N)	Min	-	-	-	-	-	-	-	-
	(NH_3-N)	Max	-	-	-	-	-	-	-	-
12	Carbonate (CO3)	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	12.10	8.40	5.60	11.20	5.70	6.00	8.40	0.00
13	Bicarbonate (HCO_3)	Min	159.00	114.00	148.00	65.00	85.00	82.00	79.00	108.00
	(HCO_3)	Max	216.00	159.00	358.00	331.00	236.00	181.00	201.00	219.00
14	Chloride (CL)	Min	3.30	5.00	5.20	2.70	3.20	3.00	4.60	3.00
		Max	17.80	12.00	15.80	44.60	36.00	12.10	10.00	17.00
15	Fluoride (F) (F)	Min	0.06	0.04	0.01	0.13	0.01	0.04	0.05	0.01
		Max	0.46	0.56	0.70	0.64	0.67	0.95	0.37	0.39
16	Sulphate (SO_4)	Min	0.80	1.70	1.10	3.10	3.80	0.30	0.30	0.70
		Max	15.70	17.00	20.60	24.80	25.60	12.70	16.20	21.30
17	Sulphite (SO_3)	Min	-	-	-	-	-	-	-	-
		Max	-	-	-	-	-	-	-	-
18	Nitrate (NO_3-N)	Min	0.02	0.04	0.05	1.10	0.02	0.02	0.01	0.05
	(NO_3-N)	Max	4.09	2.09	2.68	2.77	2.02	3.18	2.54	4.94
19	Nitrite (NO_2-N)	Min	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01
	(NO_2-N)	Max	0.09	0.03	0.06	0.26	0.06	0.02	0.06	0.45
20	Phosphate (pO_4)	Min	0.00	0.00	0.00	0.18	0.00	0.00	0.03	0.04
	(PO_4)	Max	0.36	1.08	2.31	0.90	0.55	0.49	0.55	0.45
21	Silica (Sio_2)	Min	11.30	13.40	14.20	3.70	4.10	11.00	15.40	8.80
		Max	28.00	19.60	42.20	35.00	24.30	31.10	27.50	29.40

Source: Water Quality Year Book (Narmada Basin) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

X Basin : Narmada

Sl. No.	Parameter	Site name	Gadarwara	Barman	Belkheri	Patan	Bamni	Mohgaon	Manot	Dindori
		River/Stream	Shakkar	Narmada	Sher	Hiran	Banjar	Burhner	Narmada	Narmada
(1)	(2)	(3)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
22	DO	Min	3.00	4.10	4.30	3.50	3.60	4.40	5.30	2.90
	(Dissolved Oxygen)	Max	8.00	7.50	7.00	8.00	7.20	7.50	7.90	7.00
23	BOD3-27	Min	0.20	0.10	0.10	0.50	0.20	0.10	0.30	0.60
	(Biochemical Oxygen Demand)	Max	3.00	4.20	1.50	2.80	2.70	1.20	1.30	3.50
24	Total Coliform	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
27	Phytoplankton									
	(No.per ml)	Min	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-	-	-	-
	(B)	Max	-	-	-	-	-	-	-	-
31	Cadmium	Min	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-
39	Total Hardness	Min	123.00	93.00	115.00	69.00	68.00	68.00	69.00	86.00
	(HAR _ Total)	Max	193.00	136.00	251.00	247.00	158.00	133.00	142.00	164.00
40	Na %	Min	9.00	9.00	11.00	13.00	13.00	9.00	10.00	9.00
	(Sodium Percentage)	Max	19.00	19.00	15.00	24.00	51.00	15.00	17.00	20.00
41	SAR	Min	0.30	0.20	0.30	0.30	0.30	0.20	0.20	0.30
	(Sodium Adsorption Ratio)	Max	0.60	0.50	0.50	1.00	2.10	0.40	0.40	0.60
42	RSC	Min	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.60	0.30	1.20	0.80	0.90	0.40	0.50	0.70

Source: Water Quality Year Book (Narmada Basin) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XI Basin : Tapi

Sl. No.	Parameter	Site name	Burhanpur	Gopalkheda	Sarangkheda	Mahuwa	Gadat	Durvesh	Pingalwada	Motinaroli
		River/Stream	Tapi	Purna	Tapi	Purna	Ambika	Vaitarna	Dhadhar	Kim
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Q(Cumecs)	Min	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00
	(Discharge in cubic m/s)	Max	12938.00	3598.00	7553.00	548.00	1227.00	1475.00	40.57	538.40
2	Temperature	Min	19.00	20.00	13.00	22.00	22.00	17.00	14.00	20.00
	(°C)	Max	36.00	29.00	26.00	28.00	31.00	22.00	27.00	30.00
3	pH_GEN	Min	7.80	7.30	7.30	8.00	8.00	7.90	7.50	7.50
	(Negative logarithm of hydrogen iron concentration)	Max	8.30	8.30	8.30	8.20	8.30	8.20	8.20	8.20
4	Specific	Min	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-
5	Potassium	Min	3.60	3.20	3.00	3.20	3.40	3.00	3.60	2.80
	(K)	Max	5.60	4.00	4.20	4.60	5.00	4.20	4.80	4.60
6	Sodium	Min	38.00	36.00	38.60	44.00	40.00	38.00	36.00	36.00
	(Na)	Max	60.00	52.00	44.00	52.00	50.00	56.00	52.00	53.00
7	Calcium	Min	30.00	32.00	28.00	28.00	28.00	20.00	30.00	26.00
	(Ca)	Max	58.00	50.00	52.00	38.00	38.00	40.00	96.00	70.00
8	Magnesium	Min	2.40	3.70	6.10	6.10	4.90	6.10	7.30	2.90
	(Mg)	Max	15.80	13.40	13.40	12.20	12.50	14.60	17.00	17.00
9	Aluminium	Min	0.05	0.07	0.05	0.08	0.05	0.06	0.05	0.05
	(Al)	Max	0.13	0.11	0.10	0.12	0.15	0.12	0.12	0.12
10	Iron	Min	-	-	-	-	-	-	-	-
	(Fe)	Max	-	-	-	-	-	-	-	-
11	Ammonia (NH_3-N)	Min	0.06	0.10	0.11	0.08	0.06	0.08	0.10	0.08
	(NH_3-N)	Max	0.14	0.14	0.13	0.14	0.16	0.13	0.14	0.14
12	Carbonate (CO3)	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(CO_3)	Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Bicarbonate (HCO_3)	Min	73.00	110.00	90.00	98.00	104.00	116.00	110.00	116.00
	(HCO_3)	Max	232.00	207.00	179.00	159.00	150.00	153.00	300.00	220.00
14	Chloride	Min	58.00	47.00	55.00	60.00	60.00	50.00	55.00	50.00
	(CL)	Max	93.00	70.00	84.00	90.00	78.00	80.00	75.00	85.00
15	Fluoride (F)	Min	0.10	0.11	0.14	0.09	0.10	0.13	0.10	0.12
	(F)	Max	0.14	0.14	0.15	0.14	0.15	0.16	0.15	0.14
16	Sulphate	Min	3.00	10.00	6.00	6.00	6.10	5.00	4.00	4.00
	(SO_4)	Max	12.00	22.00	11.00	12.00	10.60	15.00	34.00	25.00
17	Sulphite	Min	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-
18	Nitrate (NO_3-N)	Min	0.10	0.11	0.12	0.10	0.10	0.12	0.10	0.10
	(NO_3-N)	Max	0.13	0.13	0.14	0.14	0.14	0.16	0.14	0.16
19	Nitrite (NO_2-N)	Min	0.02	0.05	0.06	0.04	0.06	0.05	0.06	0.05
	(NO_2-N)	Max	0.15	0.10	0.12	0.10	0.12	0.12	0.16	0.15
20	Phosphate (pO_4)	Min	0.10	0.14	0.13	0.10	0.12	0.10	0.10	0.10
	(PO_4)	Max	0.15	0.15	0.14	-	0.16	0.16	0.24	0.16
21	Silica	Min	6.00	1.00	8.00	6.00	8.00	8.00	5.00	6.00
	(Sio_2)	Max	14.00	10.00	10.00	10.00	15.00	12.00	15.00	15.00

Source: Water Quality Year Book (Tapi & Other West Flowing Rivers), 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XI Basin : Tapi

Sl. No.	Parameter	Site name	Burhanpur	Gopalkheda	Sarangkheda	Mahuwa	Gadat	Durvesh	Pingalwada	Motinaroli
		River/Stream	Tapi	Purna	Tapi	Purna	Ambika	Vaitarna	Dhadhar	Kim
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
22	DO	Min	4.60	-	6.50	6.40	7.80	5.70	0.00	5.90
	(Dissolved Oxygen)	Max	9.80	-	7.20	8.20	7.80	8.30	3.50	7.20
23	BOD3-27	Min	0.40	0.60	1.00	0.70	0.80	0.70	0.40	0.20
	(Biochemical Oxygen Demand)	Max	3.00	2.20	3.90	1.80	2.70	2.80	5.30	3.70
24	Total Coliform	Min	700.00	600.00	500.00	800.00	800.00	600.00	700.00	600.00
	(No. per 100 ml)	Max	6000.00	1400.00	4000.00	3600.00	3800.00	3000.00	3200.00	1800.00
25	Faecal Coliform	Min	300.00	300.00	300.00	300.00	300.00	400.00	300.00	300.00
	(No. per 100 ml)	Max	3000.00	800.00	2000.00	1600.00	2000.00	1600.00	1700.00	800.00
26	Total plate count	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
27	Phytoplankton									
	(No.per ml)	Min	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-	-	-	-
	(B)	Max	-	-	-	-	-	-	-	-
31	Cadmium	Min	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-
39	Total Hardness	Min	90.00	95.00	95.00	121.00	90.00	96.00	111.00	91.00
	(HAR _ Total)	Max	201.00	181.00	186.00	136.00	142.00	161.00	271.00	201.00
40	Na %	Min	33.00	30.00	34.00	41.00	38.00	38.00	24.00	32.00
	(Sodium Percentage)	Max	54.00	51.00	47.00	46.00	48.00	52.00	47.00	53.00
41	SAR	Min	1.30	1.20	1.40	1.70	1.50	1.50	1.00	1.30
	(Sodium Adsorption Ratio)	Max	2.50	2.20	1.80	2.00	1.90	2.30	2.00	2.30
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.00	0.10	0.00	0.00	0.00	0.10	0.00	0.40

Source: Water Quality Year Book (Tapi & Other West Flowing Rivers), 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XII Basin : West Flowing Rivers from Tapi to Tadri

Sl. No.	Parameter	Site name	Badlapur	Mangaon	Belne Bridge	Santeguli
		River/Stream	Ulhas	Kal	Gad	Aghanashini
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Q(Cumecs)	Min	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max	860.20	390.20	501.80	449.60
2	Temperature	Min	20.00	26.50	24.00	22.00
	(^{o}C)	Max	34.00	28.50	25.00	28.00
3	pH_GEN	Min	7.40	7.40	7.20	6.50
	(Negative logarithm of hydrogen iron concentration)	Max	8.10	7.50	7.50	7.10
4	Specific	Min	-	-	-	-
	Conductance	Max	-	-	-	-
5	Potassium	Min	0.30	0.10	0.10	0.50
	(K)	Max	1.70	0.20	0.70	1.10
6	Sodium	Min	5.70	5.10	5.30	2.70
	(Na)	Max	12.80	6.50	11.30	6.00
7	Calcium	Min	14.00	14.00	11.00	2.00
	(Ca)	Max	27.00	16.00	22.00	8.00
8	Magnesium	Min	1.90	2.90	1.90	1.00
	(Mg)	Max	8.80	3.90	3.90	2.90
9	Aluminium	Min	-	-	-	-
	(Al)	Max	-	-	-	-
10	Iron	Min	0.10	1.10	0.10	0.00
	(Fe)	Max	3.30	2.60	2.30	0.20
11	Ammonia		-	-	-	-
	(NH_3-N)	Max				
	(NH_3-N)	Max	-	-	-	-
12	Carbonate					
	(CO3)	Min	0.00	0.00	0.00	0.00
	(CO_3)	Max	0.00	0.00	0.00	0.00
13	Bicarbonate					
	(HCO_3)	Min	44.00	51.00	42.00	11.00
	(HCO_3)	Max	78.00	53.00	56.00	25.00
14	Chloride	Min	9.70	9.30	9.70	3.60
	(CL)	Max	24.00	10.50	14.10	15.60
15	Fluoride (F)	Min	0.29	0.28	0.31	0.04
	(F)	Max	0.61	0.70	0.55	0.30
16	Sulphate	Min	2.10	6.30	5.00	1.70
	(SO_4)	Max	22.60	9.90	12.60	4.40
17	Sulphite	Min	-	-	-	-
	(SO_3)	Max	-	-	-	-
18	Nitrate					
	(NO_3-N)	Min	0.56	0.65	0.04	0.27
	(NO_3.N)	Max	2.27	1.42	1.42	0.88
19	Nitrite					
	(NO_2-N)	Min	0.00	0.00	0.00	0.00
	(NO_2.N)	Max	0.05	0.01	0.01	0.01
20	Phosphate					
	(pO_4)	Min	0.00	0.01	0.01	0.00
	(PO_4)	Max	0.85	0.02	0.03	0.21
21	Silica	Min	0.40	1.30	1.00	4.20
	(Sio_2)	Max	19.60	18.20	21.80	25.30

Source: Water Quality Year Book (WTT) (West Flowing Rivers from Kanyakumari to Tapi), 2015-16

Contd…….

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XII Basin : West Flowing Rivers from Tapi to Tadri

Sl. No.	Parameter	Site name	Badlapur	Mangaon	Belne Bridge	Santeguli
		River/Stream	Ulhas	Kal	Gad	Aghanashini
(1)	(2)	(3)	(4)	(5)	(6)	(7)
22	DO	Min	3.10	6.00	7.50	-
	(Dissolved Oxygen)	Max	4.60	6.60	8.60	-
23	BOD3-27	Min	0.60	0.50	0.50	-
	(Biochemical Oxygen Demand)	Max	2.00	1.10	1.40	-
24	Total Coliform	Min	1700.00	7900.00	4900.00	-
	(No. per 100 ml)	Max	540000.00	24000.00	35000.00	-
25	Faecal Coliform	Min	1300.00	4900.00	3300.00	-
	(No. per 100 ml)	Max	350000.00	13000.00	24000.00	-
26	Total plate count	Min	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-
27	Phytoplankton					
	(No.per ml)	Min	-	-	-	-
	(No. per ml)	Max	-	-	-	-
28	Zooplankton	Min	-	-	-	-
	(No. per Litre)	Max	-	-	-	-
29	Arsenic (ppm)	Min	-0.50	-	-	0.50
	(As)	Max	-0.50	-	-	1.20
30	Boron (ppm)	Min	0.00	0.04	0.00	0.02
	(B)	Max	0.16	0.11	0.09	1.59
31	Cadmium	Min	-0.01	-	-	0.00
	(Cd)	Max	-0.01	-	-	0.00
32	Chromium	Min	5.20	-	-	0.20
	(Cr)	Max	5.20	-	-	2.00
33	Copper	Min	-0.50	-	-	0.40
	(Cu)	Max	-0.50	-	-	2.00
34	Cyanide	Min	-	-	-	-
	(Cn)	Max	-	-	-	-
35	Lead	Min	-0.50	-	-	0.40
	(Pb)	Max	-0.50	-	-	0.40
36	Manganese	Min	-	-	-	-
	(Mn)	Max	-	-	-	-
37	Mercury	Min	0.03	-	-	-
	(Hg)	Max	0.03	-	-	-
38	Zinc	Min	3.63	-	-	2.30
	(Zn)	Max	3.63	-	-	6.10
39	Total Hardness	Min	48.00	48.00	40.00	10.00
	(HAR _ Total)	Max	105.00	52.00	72.00	32.00
40	Na %	Min	16.00	18.00	14.00	26.00
	(Sodium Percentage)	Max	28.00	21.00	36.00	36.00
41	SAR	Min	0.30	0.30	0.30	0.40
	(Sodium Adsorption Ratio)	Max	0.60	0.40	0.70	0.50
42	RSC	Min	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.10	0.00	0.00	0.00

Source: Water Quality Year Book (WTT) (West Flowing Rivers from Kanyakumari to Tapi), 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari

Sl. No.	Parameter	Site name	Haladi	Avershe	Yennehole	Addoor	Bantwal	Erinjipuzha	Kuzhithurai	Ashramam
		River/Stream	Haladi	Sita	Yennehole	Gurpur	Nethravathi	Payaswani	Thambraparani	Pazhayar
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Q(Cumecs)	Min	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max	391.00	343.50	610.70	903.50	2159.00	772.90	162.20	103.70
2	Temperature	Min	23.00	24.00	21.00	25.00	27.00	25.00	24.00	25.00
	(^{o}C)	Max	27.00	26.50	26.50	26.50	28.50	30.50	33.00	27.00
3	pH_GEN	Min	6.50	6.50	6.80	6.50	6.90	5.80	7.00	6.20
	(Negative logarithm of hydrogen		7.00	6.90	7.10	6.70	7.20	8.20	7.90	8.70
	iron concentration)	Max								
4	Specific	Min	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-
5	Potassium	Min	0.30	0.40	0.40	0.50	0.60	0.10	0.10	0.10
	(K)	Max	0.60	1.00	1.00	0.70	1.30	0.10	0.30	0.60
6	Sodium	Min	2.00	2.00	1.70	2.50	2.50	7.20	6.50	5.90
	(Na)	Max	3.70	3.00	2.80	3.30	3.90	9.60	19.00	14.80
7	Calcium	Min	2.00	3.00	2.00	2.00	3.00	5.00	3.00	5.00
	(Ca)	Max	4.00	4.00	3.00	3.00	5.00	8.00	14.00	16.00
8	Magnesium	Min	1.00	1.00	1.00	1.50	0.00	1.00	1.20	1.00
	(Mg)	Max	1.90	1.90	1.90	1.90	1.90	3.80	8.60	5.70
9	Aluminium	Min	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-
10	Iron	Min	0.00	0.10	0.10	0.10	0.00	0.00	0.00	0.00
	(Fe)	Max	0.20	0.20	0.20	0.30	0.10	0.00	0.00	0.00
11	Ammonia	Min	-	-	-	-	-	-	-	-
	(NH_3-N)	Max	-	-	-	-	-	-	-	-
12	Carbonate	Min	0.00	0.00	0.00	0.00	0.00	-	-	-
	(CO_3)	Max	0.00	0.00	0.00	0.00	0.00	-	-	-
13	Bicarbonate	Min	9.00	10.00	8.00	11.00	13.00	26.00	12.00	16.00
	(HCO_3)	Max	19.00	16.00	11.00	16.00	19.00	79.00	106.00	53.00
14	Chloride	Min	3.90	3.90	2.50	4.60	4.60	5.20	23.50	26.10
	(CL)	Max	7.10	6.00	7.10	6.00	6.40	30.00	31.30	39.10
15	Fluoride (F)	Min	0.02	0.02	0.02	0.02	0.04	-	-	-
	(F)	Max	0.42	0.34	0.06	0.25	0.08	-	-	-
16	Sulphate	Min	1.30	1.00	1.30	1.90	2.00	-	-	-
	(SO_4)	Max	3.80	2.40	2.20	2.20	2.20	-	-	-
17	Sulphite	Min	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-
18	Nitrate	Min	0.20	0.27	0.24	0.31	0.29	-	-	-
	(NO_3-N)	Max	0.95	0.43	0.42	0.39	0.46	-	-	-
19	Nitrite	Min	0.00	0.00	0.00	0.00	0.00	-	-	-
	(NO_2-N)	Max	0.00	0.00	0.00	0.00	0.00	-	-	-
20	Phosphate	Min	0.00	0.00	0.00	0.02	0.04	-	-	-
	(PO_4)	Max	0.32	0.32	0.18	0.21	0.15	-	-	-
21	Silica	Min	5.70	6.40	3.70	6.20	6.80	-	-	-
	(Sio_2)	Max	17.30	18.60	11.00	15.00	12.00	-	-	-

Source: Water Quality Year Book (West Flowing Rivers from Kanyakumari to Tapi), 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari

Sl. No.	Parameter	Site name	Haladi	Avershe	Yennehole	Addoor	Bantwal	Erinjipuzha	Kuzhithurai	Ashramam
		River/Stream	Haladi	Sita	Yennehole	Gurpur	Nethravathi	Payaswani	Thambraparani	Pazhayar
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
22	DO	Min	6.50	6.10	-	-	6.00	6.20	-	-
	(Dissolved Oxygen)	Max	7.50	6.70	-	-	6.30	7.20	-	-
23	BOD3-27	Min	0.40	0.20	-	-	0.40	0.60	-	-
	(Biochemical Oxygen Demand)	Max	1.20	0.60	-	-	0.90	1.60	-	-
24	Total Coliform	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	0.20	0.10	0.30	-	-	-	-	-
	(As)	Max	5.40	0.10	0.30	-	-	-	-	-
30	Boron (ppm)	Min	0.07	0.08	0.05	0.06	0.09	-	-	-
	(B)	Max	1.52	1.60	1.50	1.53	1.54	-	-	-
31	Cadmium	Min	0.00	0.00	0.00	-	-	-	-	-
	(Cd)	Max	0.00	0.00	0.00	-	-	-	-	-
32	Chromium	Min	0.20	0.20	0.10	-	-	-	-	-
	(Cr)	Max	2.10	0.20	0.10	-	-	-	-	-
33	Copper	Min	1.60	0.10	0.10	-	-	-	-	-
	(Cu)	Max	1.60	0.10	0.10	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-
35	Lead	Min	0.40	0.40	0.40	-	-	-	-	-
	(Pb)	Max	0.40	0.40	0.40	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-
38	Zinc	Min	0.50	0.30	0.10	-	-	-	-	-
	(Zn)	Max	7.10	0.30	0.10	-	-	-	-	-
39	Total Hardness	Min	12.00	12.00	8.00	12.00	12.00	16.00	13.00	16.00
	(HAR _ Total)	Max	18.00	16.00	14.00	14.00	18.00	35.00	71.00	63.00
40	Na %	Min	25.00	23.00	26.00	30.00	24.00	37.00	31.00	26.00
	(Sodium Percentage)	Max	33.00	30.00	30.00	33.00	38.00	50.00	54.00	34.00
41	SAR	Min	0.30	0.20	0.30	0.30	0.30	0.70	0.50	0.40
	(Sodium Adsorption Ratio)	Max	0.40	0.30	0.30	0.40	0.50	0.80	1.40	0.80
42	RSC	Min	0.00	0.00	0.00	0.00	0.00	-	-	-
	(Residual Sodium Carbonate)	Max	0.00	0.00	0.00	0.00	0.00	-	-	-

Source: Water Quality Year Book (West Flowing Rivers from Kanyakumari to Tapi), 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XIII Basin : West Flowing Rivers from Tadri to Kanyakumari

Sl. No.	Parameter	Site name	Perumannu	Kuttyadi	Kuniyil	Karathodu	Kumbidi	Pulamanthole	Mankara	Pudur	Ambarampalayam	Arangaly
		River/Stream	Valapatnam	Kuttyadi	Chaliyar	Kadalundi	Bharathapuzha	Pulanthodu	Bharathapuzha	Kannadipuzha	Aliyar	Chalakudy
(1)	(2)	(3)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1	Q(Cumecs)	Min	0.38	1.63	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.10
	(Discharge in cubic m/s)	Max	1296.00	432.40	1539.00	437.00	1297.00	401.20	308.10	146.90	116.90	531.50
2	Temperature	Min	25.00	26.00	28.00	26.50	27.00	29.00	26.50	26.00	23.00	27.50
	(^{o}C)	Max	29.50	30.00	34.00	29.50	30.00	32.00	30.00	30.00	27.50	33.00
3	pH_GEN	Min	6.20	6.40	4.50	6.10	6.00	6.00	6.20	6.00	7.40	6.00
	(Negative logarithm of hydrogen iron concentration)	Max	7.10	8.80	8.00	7.70	7.10	7.60	7.50	8.00	8.20	7.80
4	Specific	Min	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	0.10	0.10	0.10	0.10	0.20	0.10	0.20	0.20	1.40	0.20
	(K)	Max	0.30	0.30	0.20	0.30	0.40	0.40	0.60	0.50	6.40	0.40
6	Sodium	Min	8.00	4.90	10.20	6.90	15.20	8.00	8.20	10.70	6.80	10.40
	(Na)	Max	13.80	8.20	13.90	17.90	16.60	13.50	13.40	12.70	30.10	15.60
7	Calcium	Min	5.00	3.00	8.00	3.00	9.00	5.00	5.00	6.00	9.00	5.00
	(Ca)	Max	13.00	16.00	9.00	7.00	17.00	9.00	28.00	19.00	49.00	8.00
8	Magnesium	Min	1.90	1.00	2.90	1.90	3.80	1.00	1.90	1.90	1.90	1.90
	(Mg)	Max	4.80	9.40	3.80	4.70	9.50	3.80	6.70	7.60	27.00	4.70
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00
	(Fe)	Max	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.12	0.00
11	Ammonia	Min	-	-	-	-	-	-	-	-	0.00	-
	(NH_3-N)	Max	-	-	-	-	-	-	-	-	0.37	-
12	Carbonate	Min	-	-	-	-	-	-	-	-	0.00	-
	(CO_3)	Max	-	-	-	-	-	-	-	-	0.00	-
13	Bicarbonate	Min	16.00	21.00	27.00	10.00	2.00	12.00	29.00	10.00	36.00	12.00
	(HCO_3)	Max	48.00	79.00	63.00	48.00	111.00	45.00	135.00	124.00	205.00	85.00
14	Chloride	Min	9.10	7.80	10.40	6.50	7.80	9.10	10.40	15.60	12.10	5.20
	(CL)	Max	37.80	36.50	22.20	22.10	33.50	27.40	24.80	43.00	40.70	43.00
15	Fluoride (F)	Min	-	-	-	-	-	-	-	-	0.09	-
	(F)	Max	-	-	-	-	-	-	-	-	0.74	-
16	Sulphate	Min	-	-	-	-	-	-	-	-	3.40	-
	(SO_4)	Max	-	-	-	-	-	-	-	-	19.70	-
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	-	-	-	-	-	-	-	-	0.50	-
	(NO_3-N)	Max	-	-	-	-	-	-	-	-	3.49	-
19	Nitrite	Min	-	-	-	-	-	-	-	-	0.00	-
	(NO_2-N)	Max	-	-	-	-	-	-	-	-	0.07	-
20	Phosphate	Min	-	-	-	-	-	-	-	-	0.02	-
	(PO_4)	Max	-	-	-	-	-	-	-	-	0.15	-
21	Silica	Min	-	-	-	-	-	-	-	-	8.50	-
	(Sio_2)	Max	-	-	-	-	-	-	-	-	25.20	-

Source: Water Quality Year Book (West Flowing Rivers from Kanyakumari to Tapi), 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XIII Basin : West Flowing Rivers from Tadri to Kanya Kumari

Sl. No.	Parameter	Site name	Perumannu	Kuttyadi	Kuniyil	Karathodu	Kumbidi	Pulamanthole	Mankara	Pudur	Ambarampalayam	Arangaly
		River/Stream	Valapatnam	Kuttyadi	Chaliyar	Kadalundi	Bharathapuzha	Pulanthodu	Bharathapuzha	Kannadipuzha	Aliyar	Chalakudy
(1)	(2)	(3)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
22	DO	Min	5.60	5.20	6.00	6.40	5.80	6.20	5.80	5.80	6.10	6.40
	(Dissolved Oxygen)	Max	7.40	7.20	8.80	8.00	7.20	7.20	7.20	7.20	7.50	7.80
23	BOD3-27	Min	0.20	0.60	0.40	0.20	0.20	0.80	0.60	0.10	0.60	0.40
	(Biochemical Oxygen Demand)	Max	1.00	1.40	3.40	2.40	2.20	1.80	1.40	1.20	1.80	1.60
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-	-	-	-	0.08	-
	(B)	Max	-	-	-	-	-	-	-	-	0.80	-
31	Cadmium	Min	-	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	20.00	12.00	31.00	24.00	39.00	16.00	20.00	27.00	43.00	20.00
	(HAR _ Total)	Max	51.00	70.00	39.00	35.00	79.00	35.00	86.00	71.00	167.00	39.00
40	Na %	Min	33.00	13.00	36.00	33.00	36.00	45.00	25.00	28.00	21.00	38.00
	(Sodium Percentage)	Max	42.00	56.00	43.00	58.00	46.00	54.00	29.00	46.00	29.00	49.00
41	SAR	Min	0.60	0.30	0.70	0.60	0.90	0.90	0.50	0.70	0.40	0.80
	(Sodium Adsorption Ratio)	Max	0.80	0.90	1.00	1.30	1.10	1.20	0.60	0.90	1.00	1.10
42	RSC	Min	-	-	-	-	-	-	-	-	0.00	-
	(Residual Sodium Carbonate)	Max	-	-	-	-	-	-	-	-	0.00	-

Source: Water Quality Year Book (West Flowing Rivers from Kanyakumari to Tapi), 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XIII Basin : West Flowing Rivers from Tadri to Kanya Kumari

Sl. No.	Parameter	Site name	Neeleswaram	Vandiperiyar	Ramamangalam	Kalampur	Kidangoor	Kallooppara	Malakkara	Thumpamon	Pattazhy	Ayilam
		River/Stream	Periyar	Periyar	Muvattupuzha	Kaliyar	Meenachil	Manimala	Pamba	Achankovil	Kallada	Vamanapuram
(1)	(2)	(3)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
1	Q(Cumecs)	Min	0.00	0.00	32.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max	1726.00	58.89	740.90	218.20	450.20	483.90	619.90	236.80	335.00	307.60
2	Temperature	Min	25.00	20.00	26.00	26.00	25.00	27.00	25.00	19.00	27.00	23.00
	(^{o}C)	Max	29.00	27.00	29.00	30.00	28.00	28.50	28.00	27.50	28.00	28.00
3	pH_GEN	Min	6.20	6.40	6.80	6.00	6.20	6.20	6.10	6.40	6.30	6.20
	(Negative logarithm of hydrogen iron concentration)	Max	7.90	7.90	7.80	7.60	7.30	7.90	7.20	7.40	7.30	7.30
4	Specific	Min	-	-	-	-	-	-	-	-	-	-
	Conductance	Max	-	-	-	-	-	-	-	-	-	-
5	Potassium	Min	0.10	0.20	0.20	0.10	0.10	0.10	0.10	0.10	0.20	0.10
	(K)	Max	0.40	0.50	0.20	0.30	0.40	0.50	0.40	0.20	0.40	0.30
6	Sodium	Min	8.20	11.30	1.00	7.50	7.50	8.50	6.10	10.00	10.30	11.60
	(Na)	Max	15.50	17.70	10.00	11.80	14.50	12.50	11.50	12.80	12.10	15.60
7	Calcium	Min	5.00	5.00	3.00	5.00	5.00	3.00	3.00	5.00	3.00	3.00
	(Ca)	Max	22.00	23.00	9.00	16.00	9.00	13.00	10.00	9.00	35.00	16.00
8	Magnesium	Min	1.00	1.90	1.60	2.90	1.00	1.00	1.00	1.90	1.00	1.90
	(Mg)	Max	10.50	7.60	2.90	11.00	4.70	6.30	7.80	3.10	9.50	9.40
9	Aluminium	Min	-	-	-	-	-	-	-	-	-	-
	(Al)	Max	-	-	-	-	-	-	-	-	-	-
10	Iron	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Fe)	Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Ammonia	Min	-	-	-	-	-	-	-	-	-	-
	(NH_3-N)	Max	-	-	-	-	-	-	-	-	-	-
12	Carbonate	Min	-	-	-	-	-	-	-	-	-	-
	(CO_3)	Max	-	-	-	-	-	-	-	-	-	-
13	Bicarbonate	Min	11.00	18.00	16.00	18.00	13.00	16.00	16.00	16.00	18.00	26.00
	(HCO_3)	Max	111.00	69.00	85.00	106.00	37.00	53.00	53.00	79.00	48.00	63.00
14	Chloride	Min	9.10	7.80	7.80	5.20	5.20	7.80	6.50	7.80	9.10	7.80
	(CL)	Max	18.20	18.20	18.20	27.40	31.30	19.60	26.10	33.50	29.90	29.60
15	Fluoride (F)	Min	-	-	-	-	-	-	-	-	-	-
	(F)	Max	-	-	-	-	-	-	-	-	-	-
16	Sulphate	Min	-	-	-	-	-	-	-	-	-	-
	(SO_4)	Max	-	-	-	-	-	-	-	-	-	-
17	Sulphite	Min	-	-	-	-	-	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-	-	-	-	-	-
18	Nitrate	Min	-	-	-	-	-	-	-	-	-	-
	(NO_3-N)	Max	-	-	-	-	-	-	-	-	-	-
19	Nitrite	Min	-	-	-	-	-	-	-	-	-	-
	(NO_2-N)	Max	-	-	-	-	-	-	-	-	-	-
20	Phosphate	Min	-	-	-	-	-	-	-	-	-	-
	(PO_4)	Max	-	-	-	-	-	-	-	-	-	-
21	Silica	Min	-	-	-	-	-	-	-	-	-	-
	(Sio_2)	Max	-	-	-	-	-	-	-	-	-	-

Source: Water Quality Year Book (West Flowing Rivers from Kanyakumari to Tapi), 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XIII Basin : West Flowing Rivers from Tadri to Kanya Kumari

Sl. No.	Parameter	Site name	Neeleswaram	Vandiperiyar	Ramamangalam	Kalampur	Kidangoor	Kallooppara	Malakkara	Thumpamon	Pattazhy	Ayilam
		River/Stream	Periyar	Periyar	Muvattupuzha	Kaliyar	Meenachil	Manimala	Pamba	Achankovil	Kallada	Vamanapuram
(1)	(2)	(3)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
22	DO	Min	6.00	4.60	5.80	6.20	6.00	6.40	5.80	6.00	6.20	6.60
	(Dissolved Oxygen)	Max	7.80	7.20	8.00	7.20	8.00	8.20	8.40	8.40	7.80	7.40
23	BOD3-27	Min	0.40	0.40	0.10	0.20	0.20	0.10	0.40	0.80	0.20	0.20
	(Biochemical Oxygen Demand)	Max	1.60	1.60	1.80	1.00	1.60	1.80	2.60	2.00	1.20	1.60
24	Total Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
25	Faecal Coliform	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
26	Total plate count	Min	-	-	-	-	-	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-	-	-	-	-	-
27	Phytoplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(As)	Max	-	-	-	-	-	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-	-	-	-	-	-
	(B)	Max	-	-	-	-	-	-	-	-	-	-
31	Cadmium	Min	-	-	-	-	-	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-	-	-	-	-	-
33	Copper	Min	-	-	-	-	-	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-	-	-	-	-	-
35	Lead	Min	-	-	-	-	-	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-	-	-	-	-	-
39	Total Hardness	Min	16.00	20.00	16.00	24.00	16.00	12.00	12.00	20.00	16.00	16.00
	(HAR _ Total)	Max	86.00	86.00	31.00	57.00	43.00	47.00	48.00	33.00	127.00	74.00
40	Na %	Min	24.00	32.00	9.00	25.00	35.00	37.00	23.00	41.00	40.00	29.00
	(Sodium Percentage)	Max	47.00	55.00	49.00	48.00	51.00	62.00	57.00	49.00	59.00	56.00
41	SAR	Min	0.50	0.80	0.10	0.50	0.70	0.70	0.40	0.80	0.80	0.60
	(Sodium Adsorption Ratio)	Max	0.90	1.10	0.90	1.00	1.10	1.10	0.90	1.00	1.10	1.20
42	RSC	Min	-	-	-	-	-	-	-	-	-	-
	(Residual Sodium Carbonate)	Max	-	-	-	-	-	-	-	-	-	-

Source: Water Quality Year Book (West Flowing Rivers from Kanyakumari to Tapi), 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XIV Basin : Mahi

Sl. No.	Parameter	Site name	Mataji	Rangeli	Paderdibadi	Khanpur
		River/Stream	Mahi	Som	Mahi	Mahi
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Q(Cumecs)	Min	0.00	0.00	1.00	9.97
	(Discharge in cubic m/s)	Max	6528.00	473.10	2250.00	7091.00
2	Temperature	Min	19.00	22.00	23.00	22.00
	(°C)	Max	28.00	25.00	32.00	32.00
3	pH_GEN	Min	7.90	8.10	8.00	8.10
	(Negative logarithm of hydrogen iron concentration)	Max	8.50	8.50	8.50	8.80
4	Specific	Min	-	-	-	-
	Conductance	Max	-	-	-	-
5	Potassium	Min	0.70	0.90	0.80	0.70
	(K)	Max	1.00	1.20	2.90	2.50
6	Sodium	Min	9.20	25.80	17.50	11.20
	(Na)	Max	22.70	40.40	38.30	25.80
7	Calcium	Min	29.00	37.00	32.00	30.00
	(Ca)	Max	55.00	66.00	61.00	59.00
8	Magnesium	Min	8.00	7.80	9.00	7.80
	(Mg)	Max	14.60	23.10	20.90	20.20
9	Aluminium	Min	0.03	0.03	0.03	0.02
	(Al)	Max	0.06	0.06	0.05	0.05
10	Iron	Min	0.30	0.40	0.30	0.10
	(Fe)	Max	0.40	0.50	0.50	0.30
11	Ammonia					
	(NH_3-N)	Max	0.07	0.08	0.09	0.09
	(NH_3-N)	Max	0.38	0.53	0.55	0.89
12	Carbonate					
	(CO3)	Min	0.00	0.00	0.00	0.00
	(CO_3)	Max	14.00	19.00	17.00	19.00
13	Bicarbonate					
	(HCO_3)	Min	102.00	132.00	117.00	107.00
	(HCO_3)	Max	171.00	200.00	181.00	171.00
14	Chloride	Min	12.00	36.00	26.00	18.00
	(CL)	Max	32.00	68.00	54.00	40.00
15	Fluoride (F)	Min	0.07	0.57	0.57	0.11
	(F)	Max	0.80	0.81	1.01	0.80
16	Sulphate	Min	12.90	31.60	19.00	9.60
	(SO_4)	Max	17.80	33.30	42.30	23.80
17	Sulphite	Min	-	-	-	-
	(SO_3)	Max	-	-	-	-
18	Nitrate					
	(NO_3-N)	Min	0.49	0.26	0.27	0.14
	(NO_3-N)	Max	5.47	1.54	2.56	2.33
19	Nitrite					
	(NO_2-N)	Min	0.01	0.00	0.01	0.01
	(NO_2-N)	Max	0.06	0.17	0.11	0.03
20	Phosphate					
	(pO_4)	Min	0.01	0.09	0.06	0.05
	(PO_4)	Max	0.08	0.11	0.10	0.07
21	Silica	Min	30.40	18.40	16.20	21.90
	(Sio_2)	Max	46.10	29.00	38.30	35.40

Source: Water Quality Year Book (Mahi, Sabarmati & Other Basins) , 2015-16

Contd/…

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XIV Basin : Mahi

Sl. No.	Parameter	Site name	Mataji	Rangeli	Paderdibadi	Khanpur
		River/Stream	Mahi	Som	Mahi	Mahi
(1)	(2)	(3)	(4)	(5)	(6)	(7)
22	DO	Min	4.80	6.10	5.00	6.30
	(Dissolved Oxygen)	Max	8.30	7.70	10.40	9.00
23	BOD3-27	Min	0.20	1.30	0.70	0.70
	(Biochemical Oxygen Demand)	Max	4.20	4.70	6.10	3.90
24	Total Coliform	Min	70.00	80.00	45.00	40.00
	(No. per 100 ml)	Max	58000.00	76000.00	79000.00	94000.00
25	Faecal Coliform	Min	20.00	18.00	20.00	2.00
	(No. per 100 ml)	Max	17000.00	4300.00	21000.00	17000.00
26	Total plate count	Min	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-
27	Phytoplankton					
	(No.per ml)	Min	-	-	-	-
	(No. per ml)	Max	-	-	-	-
28	Zooplankton	Min	-	-	-	-
	(No. per Litre)	Max	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-
	(As)	Max	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-
	(B)	Max	-	-	-	-
31	Cadmium	Min	-	-	-	-
	(Cd)	Max	-	-	-	-
32	Chromium	Min	-	-	-	-
	(Cr)	Max	-	-	-	-
33	Copper	Min	-	-	-	-
	(Cu)	Max	-	-	-	-
34	Cyanide	Min	-	-	-	-
	(Cn)	Max	-	-	-	-
35	Lead	Min	-	-	-	-
	(Pb)	Max	-	-	-	-
36	Manganese	Min	-	-	-	-
	(Mn)	Max	-	-	-	-
37	Mercury	Min	-	-	-	-
	(Hg)	Max	-	-	-	-
38	Zinc	Min	-	-	-	-
	(Zn)	Max	-	-	-	-
39	Total Hardness	Min	120.00	154.00	138.00	110.00
	(HAR _ Total)	Max	181.00	253.00	199.00	188.00
40	Na %	Min	12.00	24.00	18.00	18.00
	(Sodium Percentage)	Max	22.00	27.00	30.00	25.00
41	SAR	Min	0.30	0.90	0.60	0.50
	(Sodium Adsorption Ratio)	Max	0.70	1.10	1.20	0.80
42	RSC	Min	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.00	0.00	0.00	0.00

Source: Water Quality Year Book (Mahi, Sabarmati & Other Basins) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XV Basin : Sabarmati

Sl. No.	Parameter	Site name	Derol Bridge	Vautha
		River/Stream	Sabarmati	Sabarmati
(1)	(2)	(3)	(4)	(5)
1	Q(Cumecs)	Min	0.00	10.11
	(Discharge in cubic m/s)	Max	3189.00	3137.00
2	Temperature	Min	25.00	19.00
	(°C)	Max	29.00	30.60
3	pH_GEN	Min	8.00	7.90
	(Negative logarithm of hydrogen iron concentration)	Max	8.50	8.40
4	Specific	Min	-	-
	Conductance	Max	-	-
5	Potassium	Min	0.90	1.80
	(K)	Max	1.30	25.20
6	Sodium	Min	10.20	17.50
	(Na)	Max	44.50	368.20
7	Calcium	Min	22.00	24.00
	(Ca)	Max	49.00	141.00
8	Magnesium	Min	5.10	7.10
	(Mg)	Max	22.40	52.30
9	Aluminium	Min	0.03	0.03
	(Al)	Max	0.04	0.09
10	Iron	Min	0.10	0.20
	(Fe)	Max	0.20	0.40
11	Ammonia			
	(NH_3-N)	Max	0.19	0.70
	(NH_3-N)	Max	0.65	31.00
12	Carbonate			
	(CO3)	Min	0.00	0.00
	(CO_3)	Max	14.00	31.00
13	Bicarbonate			
	(HCO_3)	Min	83.00	88.00
	(HCO_3)	Max	146.00	537.00
14	Chloride	Min	14.00	28.00
	(CL)	Max	74.00	486.00
15	Fluoride (F)	Min	0.12	0.11
	(F)	Max	0.80	1.01
16	Sulphate	Min	10.10	4.60
	(SO_4)	Max	12.70	92.80
17	Sulphite	Min	-	-
	(SO_3)	Max	-	-
18	Nitrate	Min	0.68	1.09
	(NO_3-N)	Max	2.26	2.91
19	Nitrite	Min	0.01	0.01
		Max	0.61	0.60
20	Phosphate	Min	0.07	0.14
	(pO_4)	Max	0.08	0.27
21	Silica	Min	17.90	17.70
	(Sio_2)	Max	22.20	54.40

XV Basin : Sabarmati

Sl. No.	Parameter	Site name	Derol Bridge	Vautha
		River/Stream	Sabarmati	Sabarmati
(1)	(2)	(3)	(4)	(5)
22	DO	Min	4.10	0.00
	(Dissolved Oxygen)	Max	10.10	8.50
23	BOD3-27	Min	0.50	5.50
	(Biochemical Oxyge	Max	3.80	52.70
24	Total Coliform (No. per 100 ml)	Min	80.00	420.00
		Max	79000.00	74000.00
25	Faecal Coliform	Min	20.00	170.00
	(No. per 100 ml)	Max	26000.00	22000.00
26	Total plate count	Min	-	-
	(No. per 100 ml)	Max	-	-
27	Phytoplankton (No.per ml)	Min	-	-
	(No. per ml)	Max	-	-
28	Zooplankton	Min	-	-
	(No. per Litre)	Max	-	-
29	Arsenic (ppm)	Min	-	-
	(As)	Max	-	-
30	Boron (ppm)	Min	-	-
	(B)	Max	-	-
31	Cadmium	Min	-	-
	(Cd)	Max	-	-
32	Chromium		-	-
		Min		
	(Cr)	Max	-	-
33	Copper		-	-
		Min		
	(Cu)	Max	-	-
34	Cyanide		-	-
		Min		
	(Cn)	Max	-	-
35	Lead	Min	-	-
	(Pb)	Max	-	-
36	Manganese	Min	-	-
	(Mn)	Max	-	-
37	Mercury	Min	-	-
	(Hg)	Max	-	-
38	Zinc	Min	-	-
	(Zn)	Max	-	-
39	Total Hardness	Min	77.00	90.00
	(HAR _ Total)	Max	181.00	558.00
40	Na %	Min	22.00	29.00
	(Sodium Percentage)	Max	37.00	64.00
41	SAR (Sodium Adsorption Ratio)	Min	0.50	0.80
		Max	1.50	7.50
42	RSC (Residual Sodium Carbonate)	Min	0.00	0.00
		Max	0.00	0.10

Source: Water Quality Year Book (Mahi, Sabarmati & Other Basins) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XVI Basin : West Flowing River from Kutch & Saurashtra including Luni

Sl. No.	Parameter	Site name	Abu Road	Kamalpur	Chitrasani	Lowara	Ganod
		River/Stream	Banas	Banas	Balaram	Shetrunji	Bhadar
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Q(Cumecs)	Min	0.00	0.00	0.00	0.00	0.00
	(Discharge in cubic m/s)	Max	38.50	1071.00	625.50	2218.00	2030.00
2	Temperature	Min	14.00	19.00	14.00	11.00	16.00
	(°C)	Max	28.00	27.80	25.00	26.00	30.00
3	pH_GEN	Min	8.10	7.80	8.00	8.20	8.30
	(Negative logarithm of hydrogen iron concentration)	Max	8.50	8.70	8.50	8.40	8.80
4	Specific	Min	-	-	-	-	-
	Conductance	Max	-	-	-	-	-
5	Potassium	Min	0.80	0.80	1.00	2.20	0.80
	(K)	Max	1.80	0.90	1.40	19.80	5.40
6	Sodium	Min	21.60	9.20	22.70	82.00	30.00
	(Na)	Max	118.60	19.60	61.20	3162.00	274.60
7	Calcium	Min	34.00	23.00	30.00	45.00	25.00
	(Ca)	Max	109.00	29.00	79.00	414.00	87.00
8	Magnesium	Min	6.10	8.80	10.70	23.60	7.30
	(Mg)	Max	28.20	13.60	14.10	97.70	47.40
9	Aluminium	Min	0.04	0.05	0.05	0.05	0.04
	(Al)	Max	0.05	0.07	0.07	0.11	0.06
10	Iron	Min	0.10	0.30	0.10	0.70	0.10
	(Fe)	Max	0.20	0.30	0.20	0.90	0.40
11	Ammonia		0.08	0.46	0.31	0.08	0.08
	(NH_3-N)	Max					
	(NH_3-N)	Max	0.22	0.57	0.41	0.45	0.82
12	Carbonate		0.00	0.00	0.00	0.00	0.00
	(CO3)	Min					
	(CO_3)	Max	10.00	14.00	17.00	17.00	19.00
13	Bicarbonate		107.00	88.00	122.00	107.00	78.00
	(HCO_3)	Min					
	(HCO_3)	Max	356.00	98.00	249.00	971.00	273.00
14	Chloride	Min	28.00	14.00	30.00	156.00	46.00
	(CL)	Max	176.00	28.00	84.00	4750.00	450.00
15	Fluoride (F)	Min	0.52	0.12	0.44	0.57	0.26
	(F)	Max	0.56	0.62	0.94	0.99	0.81
16	Sulphate	Min	17.30	13.30	15.40	51.10	19.80
	(SO_4)	Max	21.60	14.50	20.60	92.90	75.40
17	Sulphite	Min	-	-	-	-	-
	(SO_3)	Max	-	-	-	-	-
18	Nitrate						
	(NO_3-N)	Min	2.04	1.23	1.47	0.84	0.27
	(NO_3-N)	Max	2.56	1.59	3.66	2.32	1.43
19	Nitrite						
	(NO_2-N)	Min	0.04	0.29	0.01	0.01	0.01
	(NO_2-N)	Max	0.05	0.36	0.03	0.10	0.34
20	Phosphate						
	(pO_4)	Min	0.09	0.08	0.05	0.09	0.06
	(PO_4)	Max	0.14	0.09	0.09	0.17	0.12
21	Silica	Min	28.30	16.90	20.40	11.50	16.40
	(Sio_2)	Max	32.60	19.00	35.70	25.10	35.90

Source: Water Quality Year Book (Mahi, Sabarmati & Other Basins) , 2015-16

Contd……..

Table 13 : Maximum and minimum values of water quality parameters by site and river basin during 2015-16

XVI Basin : West Flowing River from Kutch & Saurashtra including Luni

Sl. No.	Parameter	Site name	Abu Road	Kamalpur	Chitrasani	Lowara	Ganod
		River/Stream	Banas	Banas	Balaram	Shetrunji	Bhadar
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
22	DO	Min	8.90	7.50	6.40	6.40	4.80
	(Dissolved Oxygen)	Max	10.60	9.50	8.60	7.80	11.90
23	BOD3-27	Min	3.40	1.80	1.00	1.50	2.30
	(Biochemical Oxygen Demand)	Max	4.80	7.40	1.90	4.40	7.30
24	Total Coliform	Min	170.00	790.00	60.00	70.00	17.00
	(No. per 100 ml)	Max	920.00	3500.00	630.00	840.00	79000.00
25	Faecal Coliform	Min	20.00	170.00	2.00	2.00	20.00
	(No. per 100 ml)	Max	110.00	390.00	390.00	170.00	790.00
26	Total plate count	Min	-	-	-	-	-
	(No. per 100 ml)	Max	-	-	-	-	-
27	Phytoplankton						
	(No.per ml)	Min	-	-	-	-	-
	(No. per ml)	Max	-	-	-	-	-
28	Zooplankton	Min	-	-	-	-	-
	(No. per Litre)	Max	-	-	-	-	-
29	Arsenic (ppm)	Min	-	-	-	-	-
	(As)	Max	-	-	-	-	-
30	Boron (ppm)	Min	-	-	-	-	-
	(B)	Max	-	-	-	-	-
31	Cadmium	Min	-	-	-	-	-
	(Cd)	Max	-	-	-	-	-
32	Chromium	Min	-	-	-	-	-
	(Cr)	Max	-	-	-	-	-
33	Copper	Min	-	-	-	-	-
	(Cu)	Max	-	-	-	-	-
34	Cyanide	Min	-	-	-	-	-
	(Cn)	Max	-	-	-	-	-
35	Lead	Min	-	-	-	-	-
	(Pb)	Max	-	-	-	-	-
36	Manganese	Min	-	-	-	-	-
	(Mn)	Max	-	-	-	-	-
37	Mercury	Min	-	-	-	-	-
	(Hg)	Max	-	-	-	-	-
38	Zinc	Min	-	-	-	-	-
	(Zn)	Max	-	-	-	-	-
39	Total Hardness	Min	110.00	98.00	126.00	210.00	94.00
	(HAR _ Total)	Max	349.00	129.00	249.00	1413.00	414.00
40	Na %	Min	30.00	15.00	27.00	46.00	34.00
	(Sodium Percentage)	Max	42.00	29.00	35.00	83.00	59.00
41	SAR	Min	0.90	0.40	0.90	2.50	1.40
	(Sodium Adsorption Ratio)	Max	2.80	0.80	1.70	36.70	5.90
42	RSC	Min	0.00	0.00	0.00	0.00	0.00
	(Residual Sodium Carbonate)	Max	0.00	0.00	0.00	0.00	0.00

Source: Water Quality Year Book (Mahi, Sabarmati & Other Basins) , 2015-16

Note : 1. All the ionic concentrations are expressed in mg./lit. unless mentioned otherwise.

2. (-) indicate that analyis of a particular parameter has not been carried out.

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
				2	3	6	10	13	14	16	15
I	**Basin : Mahanadi**										
i)	**JHARKHAND**										
1	**Simdega**	3639.71	145.66	151.85	41.49	16.45	11.91	29.89	52.11	2.81	54.91
	Sub Total	**3639.71**	**145.66**	**151.85**	**41.49**	**16.45**	**11.91**	**29.89**	**52.11**	**2.81**	**54.91**
ii)	**ODISHA**										
1	**Anugul**	6129.61	2060.53	1423.11	410.12	211.78	178.16	322.71	300.34	13.59	313.92
2	**Balangir**	6332.43	6332.43	5421.08	510.00	680.00	750.00	930.00	2551.08	156.86	2707.94
3	**Bargarh**	5583.76	5583.76	4669.37	290.00	660.00	400.00	640.00	2679.37	823.70	3503.07
4	**Boudh**	3006.39	3006.39	2032.24	290.00	410.00	360.00	350.00	622.24	28.12	650.36
5	**Cuttack**	3802.97	3683.62	3234.87	213.10	987.99	358.39	445.56	1229.83	345.34	1575.17
6	**Deogarh**	2726.66	271.58	170.63	67.73	19.92	16.93	17.93	48.12	0.57	48.69
7	**Dhenkanal**	4310.65	660.17	510.01	84.23	81.17	94.95	111.80	137.86	10.32	148.18
8	**Ganjam**	8197.71	499.49	370.24	31.07	90.18	32.90	60.93	155.16	38.67	193.83
9	**Jagatsinghapur**	1678.55	1678.55	1725.65	50.00	550.00	190.00	110.00	825.65	482.90	1308.55
10	**Jajapur**	2792.19	41.71	39.74	2.99	9.11	3.88	5.83	17.93	3.46	21.39
11	**Jharsuguda**	2036.85	2036.85	1695.38	240.00	430.00	280.00	280.00	465.38	6.41	471.79
12	**Kalahandi**	7633.06	6570.09	5002.05	972.64	619.73	568.09	1015.67	1825.92	295.29	2121.20
13	**Kandhamal**	7770.03	5807.13	3271.38	1278.01	919.27	224.21	575.48	274.41	7.29	281.69
14	**Kendrapara**	2388.95	1292.70	1243.80	21.64	303.03	91.99	146.10	681.04	138.60	819.63
15	**Khordha**	2654.72	2462.32	2523.83	306.08	612.17	426.66	250.43	928.49	194.59	1123.08
16	**Nabarangpur**	5236.39	1655.37	1270.53	319.29	139.10	135.94	120.13	556.09	6.87	562.95
17	**Nayagarh**	3755.00	3458.66	2287.35	432.91	423.70	294.75	267.11	868.88	209.65	1078.53
18	**Nuapada**	3728.43	3728.43	2448.32	430.00	320.00	250.00	490.00	958.32	117.05	1075.37
19	**Puri**	3433.02	3433.02	2789.09	90.00	580.00	360.00	470.00	1289.09	561.91	1851.00
20	**Rayagada**	7126.04	104.47	83.80	14.07	36.36	4.54	11.44	17.39	0.72	18.11
21	**Sambalpur**	6479.54	5266.85	3308.69	918.51	308.88	463.32	471.45	1146.52	80.50	1227.03
22	**Sonepur**	2271.97	2271.97	1857.75	100.00	260.00	200.00	230.00	1067.75	332.10	1399.85
23	**Sundargarh**	9353.52	3941.17	3009.92	758.44	535.12	337.09	522.48	856.79	17.15	873.94
	Sub Total	**108428.44**	**65847.26**	**50388.85**	**7830.84**	**9187.50**	**6021.81**	**7845.06**	**19503.65**	**3871.64**	**23375.29**
iii)	**MADHYA PRADESH**										
1	**Anuppur**	3637.40	121.78	125.44	25.59	20.68	9.01	21.27	48.89	10.67	59.56
2	**Balaghat**	8897.36	0.10	0.10	0.06	0.01	0.01	0.01	0.03	0.01	0.04
3	**Dindori**	5543.20	27.29	17.67	1.25	1.93	1.49	3.11	9.89	4.25	14.13
4	**Mandla**	7201.48	2.50	3.35	2.06	0.19	0.16	0.18	0.77	0.32	1.09
	Sub Total	**25279.44**	**151.67**	**146.57**	**28.96**	**22.80**	**10.66**	**24.57**	**59.58**	**15.25**	**74.82**
iv)	**CHHATISGARH**										
1	**Bastar**	10152.59	347.86	134.34	28.65	15.90	23.08	8.77	57.93	1.93	59.86
2	**Bilaspur**	8022.86	7190.01	5214.47	1957.60	351.24	580.92	266.44	2058.27	482.92	2541.19
3	**Dhamtari**	3915.57	3903.65	4069.50	2056.33	318.82	226.78	20.71	1446.87	612.35	2059.22
4	**Durg**	8287.60	8256.76	2311.36	0.00	405.01	307.53	121.14	1477.68	412.47	1890.15
5	**Jashpur**	5583.19	3918.09	4531.59	1599.13	549.24	363.34	310.33	1709.55	93.03	1802.58
6	**Janjgir-Champa**	3723.65	3723.65	4466.74	893.27	379.95	490.95	131.24	2571.33	335.26	2906.59
7	**Kabirdham**	4061.73	3465.32	3794.06	1616.33	228.47	280.03	95.00	1574.24	703.76	2278.00
8	**Korba**	6333.50	6333.17	7145.07	4715.52	596.99	362.55	155.22	1314.78	103.95	1418.74
9	**Korea**	6383.21	2478.01	2320.59	1548.90	140.37	130.07	140.48	360.77	41.21	401.98
10	**Mahasamund**	4559.96	4559.96	4963.01	1394.91	431.48	371.20	84.26	2681.16	331.98	3013.14
11	**Raigarh**	6819.11	6818.53	6527.18	2076.68	717.20	694.18	484.04	2555.08	318.92	2874.01
12	**Raipur**	11995.63	11995.63	2914.37	29.40	472.13	571.36	210.98	1630.50	379.45	2009.95
13	**Rajnandgaon**	7764.54	5467.60	5649.26	1821.70	487.65	548.54	336.45	2454.93	840.90	3295.82
14	**Surguja**	15125.37	2477.40	822.20	393.36	49.74	75.35	42.09	261.65	37.37	299.02
15	**Kanker**	6567.07	2278.90	2232.26	966.01	173.31	266.97	91.48	734.49	61.24	795.73
	Sub Total	**109295.58**	**73214.54**	**57096.01**	**21097.80**	**5317.50**	**5292.85**	**2498.64**	**22889.23**	**4756.74**	**27645.98**
v)	**MAHARASHTRA**										
1	**Gadchirol**	13966.06	298.56	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
2	**Gondiya**	5273.77	23.83	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
	Sub Total	**19239.83**	**322.39**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**
	Grand Total	**265883.00**	**139681.52**	**107783.28**	**28999.09**	**14544.24**	**11337.23**	**10398.15**	**42504.56**	**8646.43**	**51151.00**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
II	**Basin : Subernarekha & Bhurhabalang**										
i)	**JHARKHAND**										
1	**Bokaro**	2688.22	17.01	18.29	4.69	4.33	1.34	6.17	1.76	0.36	2.12
2	**Khunti**	2603.07	1297.28	1301.17	226.93	189.55	87.32	461.86	335.52	179.27	514.79
3	**West Singhbhum**	6941.29	2687.33	2198.13	551.06	401.82	199.32	648.40	397.52	112.55	510.07
4	**EAST SINGHBUM**	3433.65	3119.28	5057.28	1134.16	1699.42	441.85	1101.21	680.65	182.60	863.25
5	**Ramgarh**	1259.52	136.64	151.88	45.86	33.37	5.47	59.73	7.44	40.04	47.48
6	**Ranchi**	4743.84	2802.26	2937.66	588.26	558.33	201.85	998.33	590.89	225.29	816.18
7	**Saraikela Kharsawan**	2546.17	2536.09	2362.92	647.15	378.85	178.36	584.01	574.55	33.42	607.96
	Sub Total	**24215.76**	**12595.89**	**14027.33**	**3198.11**	**3265.68**	**1115.52**	**3859.69**	**2588.33**	**773.53**	**3361.86**
ii)	**ODISHA**										
1	**Baleshwar**	3733.69	2644.77	2475.82	99.17	446.26	332.93	155.84	1441.63	228.08	1669.71
2	**Mayurbhanj**	10035.64	7146.63	4979.59	498.49	655.15	790.46	754.85	2280.64	52.16	2332.80
	Sub Total	**13769.33**	**9791.40**	**7455.41**	**597.66**	**1101.42**	**1123.38**	**910.69**	**3722.26**	**280.25**	**4002.51**
iii)	**WEST BENGAL**										
1	**Pashchim Medinipur**	9021.98	2387.68	2457.50	455.03	431.93	19.92	181.66	1368.95	1343.25	2712.20
2	**Purba Medinipur**	3893.57	85.26	86.84	0.20	23.11	0.39	0.17	62.98	54.95	117.93
3	**Puruliya**	6003.10	931.92	971.25	116.50	175.53	15.80	183.48	479.94	51.75	531.68
	Sub Total	**18918.65**	**3404.86**	**3515.60**	**571.73**	**630.58**	**36.10**	**365.32**	**1911.87**	**1449.94**	**3361.81**
	Grand Total	**56903.74**	**25792.15**	**24998.34**	**4367.49**	**4997.67**	**2275.01**	**5135.70**	**8222.47**	**2503.71**	**10726.18**
III	**Basin : Brahamani and Baitarni**										
i)	**JHARKHAND**										
1	**Gumla**	5149.51	4312.74	4474.94	1133.49	505.86	281.25	1424.41	1129.93	42.66	1172.59
2	**Khunti**	2603.07	1305.80	1309.72	228.42	190.79	87.89	464.89	337.72	180.45	518.17
3	**Latehar**	4092.97	11.85	11.10	5.65	1.11	0.55	2.66	1.14	0.53	1.66
4	**Lohardaga**	1439.38	911.85	973.19	280.99	133.40	60.26	235.50	263.04	65.80	328.84
5	**West Singhbhum**	6941.29	4253.95	3479.56	872.30	636.07	315.52	1026.40	629.27	178.16	807.43
6	**Ranchi**	4743.84	1150.39	1205.98	241.49	229.21	82.87	409.84	242.57	92.49	335.06
7	**Simdega**	3639.71	3494.05	3642.49	995.25	394.60	285.77	716.93	1249.94	67.32	1317.27
	Sub Total	**28609.77**	**15440.63**	**15096.98**	**3757.59**	**2091.05**	**1114.10**	**4280.63**	**3853.61**	**627.41**	**4481.02**
ii)	**CHHATISGARH**										
1	**Jashpur**	5583.19	1205.37	1394.11	491.96	168.97	111.78	95.47	525.93	28.62	554.55
2	**Surguja**	15125.37	158.79	52.70	25.21	3.19	4.83	2.70	16.77	2.40	19.17
	Sub Total	**20708.56**	**1364.16**	**1446.81**	**517.17**	**172.16**	**116.61**	**98.17**	**542.70**	**31.01**	**573.71**
iii)	**ODISHA**										
1	**Anugul**	6129.61	4069.08	2810.32	809.88	418.22	351.84	637.29	593.09	26.83	619.93
2	**Baleshwar**	3733.69	1081.10	1012.04	40.54	182.42	136.09	63.70	589.29	93.23	682.52
3	**Bhadrak**	2390.28	2390.28	2380.28	10.00	400.00	220.00	130.00	1620.28	84.27	1704.55
4	**Cuttack**	3802.97	119.34	104.80	6.90	32.01	11.61	14.44	39.84	11.19	51.03
5	**Deogarh**	2706.30	2434.72	1541.23	611.76	179.93	152.94	161.94	434.67	5.12	439.78
6	**Dhenkanal**	4310.65	3650.47	2820.14	465.77	448.83	525.05	618.20	762.30	57.06	819.36
7	**Jajapur**	2792.19	2750.48	2620.82	197.01	600.89	256.12	384.17	1182.63	228.10	1410.73
8	**Kendrapara**	2388.95	1096.25	1054.78	18.36	256.97	78.01	123.90	577.54	117.53	695.08
9	**Kendujhar**	7996.91	7996.91	6475.57	1460.00	1540.00	560.00	1060.00	1855.57	70.63	1926.20
10	**Mayurbhanj**	10035.64	2889.01	2012.99	201.51	264.85	319.54	305.15	921.94	21.09	943.03
11	**Sambalpur**	6479.54	1212.69	761.82	211.49	71.12	106.68	108.55	263.99	18.54	282.52
12	**Sundargarh**	9353.52	5412.35	4133.49	1041.56	734.88	462.91	717.52	1176.62	23.54	1200.16
	Sub Total	**62120.25**	**35102.68**	**27728.28**	**5074.78**	**5130.11**	**3180.78**	**4324.85**	**10017.76**	**757.14**	**10774.90**
	Grand Total	**111438.58**	**51907.47**	**44272.07**	**9349.54**	**7393.31**	**4411.50**	**8703.65**	**14414.07**	**1415.56**	**15829.63**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
IV	**Basin : Godavari**										
i)	**ANDHRA PRADESH**										
1	**East Godavari**	10571.11	5889.31	7133.98	2598.90	1337.59	246.78	522.54	2428.16	1356.36	3784.52
2	**VISAKHAPATANAM**	11115.36	3614.27	3629.11	1434.50	781.34	149.62	361.78	901.87	238.58	1140.45
3	**West Godavari**	7582.74	1682.39	1887.38	294.87	361.45	75.08	99.75	1056.23	481.84	1538.08
	Sub Total	**29269.21**	**11185.97**	**12650.47**	**4328.27**	**2480.38**	**471.49**	**984.06**	**4386.27**	**2076.78**	**6463.05**
ii)	**TELANGANA**										
1	**Adilabad**	15526.99	15526.99	16105.00	6895.17	1057.06	415.35	2272.15	5465.27	811.38	6276.65
2	**Karimnagar**	11539.77	11530.94	11813.95	2502.18	1920.65	762.48	2426.24	4202.40	1161.67	5364.07
3	**Khammam**	15646.02	9996.76	8476.15	3556.83	1267.14	434.16	776.59	2441.42	239.46	2680.88
4	**Medak**	9489.96	9128.93	9330.98	879.13	1259.09	494.05	2307.00	4391.71	698.48	5090.18
5	**Nizamabad**	7674.38	7674.38	7956.00	1693.43	1451.40	338.44	1862.05	2610.68	941.68	3552.36
6	**RANGAREDDI**	7358.88	505.32	514.53	50.18	96.39	43.22	181.12	143.61	16.30	159.91
7	**Warangal**	12447.42	6248.20	6448.27	1862.37	620.53	532.65	962.88	2469.85	638.33	3108.18
	Sub Total	**79683.42**	**60611.52**	**60644.89**	**17439.30**	**7672.26**	**3020.35**	**10788.04**	**21724.94**	**4507.30**	**26232.24**
iii)	**KARNATAKA**										
1	**Bidar**	5293.88	4469.12	4573.61	233.90	353.68	373.81	897.80	2714.41	643.06	3357.47
2	**Gulbarga**	10687.27	0.18	0.18	0.01	0.01	0.01	0.03	0.13	0.02	0.15
	Sub Total	**15981.15**	**4469.30**	**4573.79**	**233.91**	**353.69**	**373.81**	**897.83**	**2714.54**	**643.08**	**3357.62**
iv)	**MADHYA PRADESH**										
1	**Balaghat**	8897.36	6686.72	6947.99	3795.86	432.52	405.52	347.78	1966.31	608.86	2575.17
2	**Betul**	9690.38	2129.74	2214.93	873.38	159.99	146.35	83.03	952.18	371.13	1323.32
3	**Chhindwara**	11361.38	7972.16	8314.48	3349.52	493.58	595.67	303.14	3572.56	1528.03	5100.59
4	**Mandla**	7201.48	709.24	950.93	584.16	53.67	44.84	50.28	217.98	92.09	310.07
5	**Seoni**	8422.70	6269.58	6516.20	2445.45	458.66	399.88	305.58	2906.63	1285.48	4192.11
	Sub Total	**45573.30**	**23767.44**	**24944.53**	**11048.38**	**1598.41**	**1592.26**	**1089.82**	**9615.66**	**3885.59**	**13501.25**
v)	**CHHATISGARH**										
1	**Bastar**	10152.59	9804.73	3786.58	807.66	448.23	650.62	247.33	1632.75	54.49	1687.24
2	**Bijapur**	8511.40	8511.40	6552.96	4945.98	252.54	524.30	197.85	632.29	0.49	632.78
3	**Dantewada**	8466.39	8466.39	3410.50	1488.66	393.09	305.19	223.94	999.62	15.73	1015.35
4	**Dhamtari**	3915.57	11.93	12.44	6.28	0.97	0.69	0.06	4.42	1.87	6.29
5	**Durg**	8287.60	30.84	8.63	0.00	1.51	1.15	0.45	5.52	1.54	7.06
6	**Narayanpur**	4131.46	4131.46	6922.68	6386.53	49.62	105.68	65.88	314.97	2.90	317.87
7	**Rajnandgaon**	7764.54	2218.36	2292.07	739.12	197.85	222.56	136.51	996.03	341.18	1337.21
8	**Kanker**	6567.07	4288.17	4200.42	1817.73	326.11	502.36	172.15	1382.07	115.24	1497.31
	Sub Total	**57796.62**	**37463.28**	**27186.27**	**16191.95**	**1669.93**	**2312.54**	**1044.16**	**5967.68**	**533.43**	**6501.11**
vi)	**MAHARASHTRA**										
1	**Ahmadnagar**	16510.41	10368.10	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
2	**Akola**	5214.95	0.23	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
3	**Amravati**	11765.11	4020.91	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
4	**Aurangabad**	9772.28	8725.44	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
5	**Bhandara**	3719.41	3719.41	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
6	**Bid**	10244.73	8798.17	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
7	**Buldana**	9409.67	3796.29	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
8	**Chandrapur**	10917.27	10917.27	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
9	**Gadchiroli**	13966.06	13667.51	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
10	**Gondiya**	5273.77	5249.95	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
11	**Hingoli**	4514.84	4514.84	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
12	**Jalgaon**	11349.74	15.66	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
13	**Jalna**	7510.09	7386.59	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
14	**Latur**	7009.52	7007.07	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
15	**Nagpur**	9564.49	9564.49	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
16	**Nanded**	10260.74	10260.74	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
17	**Nashik**	15021.09	6973.25	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
18	**Osmanabad**	7347.20	2980.50	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19	**Parbhani**	6154.98	6154.98	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
20	**Pune**	15185.75	81.25	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
21	**Thane**	9208.22	3.10	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
22	**Wardha**	6084.96	6084.96	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
23	**Washim**	5017.05	3960.73	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
24	**Yavatmal**	13069.20	13069.20	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
	Sub Total	**224091.53**	**147320.64**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**
vii)	**ODISHA**										
1	**Kalahandi**	7633.06	417.57	317.91	61.82	39.39	36.11	64.55	116.05	18.77	134.82
2	**Koraput**	8180.27	6693.33	4962.93	744.59	1554.63	670.95	597.31	1395.46	236.84	1632.30
3	**Malkangiri**	5650.92	5650.92	4235.18	1540.00	790.00	290.00	460.00	1155.18	38.40	1193.58
4	**NABARANGPUR**	5236.39	3581.02	2748.52	690.71	300.90	294.06	259.87	1202.96	14.86	1217.83
5	**Rayagada**	7126.04	871.13	698.77	117.36	303.17	37.90	95.35	145.00	5.99	150.99
	Sub Total	**33826.68**	**17213.97**	**12963.31**	**3154.47**	**2988.10**	**1329.01**	**1477.08**	**4014.65**	**314.86**	**4329.51**
viii)	**PUDUCHERRY**										
1	**Yanam**	36.94	36.94	23.91	0.00	12.52	4.38	0.65	6.36	2.93	9.29
	Sub Total	**36.94**	**36.94**	**23.91**	**0.00**	**12.52**	**4.38**	**0.65**	**6.36**	**2.93**	**9.29**
	Grand Total	**486258.85**	**302069.06**	**142987.16**	**52396.28**	**16775.29**	**9103.84**	**16281.65**	**48430.10**	**11963.97**	**60394.07**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
V	**Basin : Krishna**										
i)	**ANDHRA PRADESH**										
1	**Anantapur**	18987.72	4185.59	4216.95	434.21	696.77	140.63	1071.15	1874.19	154.22	2028.41
2	**Guntur**	11186.51	6545.38	6665.03	947.54	1216.70	393.82	958.89	3148.08	809.31	3957.38
3	**Krishna**	8365.25	4686.80	4889.48	426.85	1073.80	235.66	572.81	2580.37	833.67	3414.03
4	**Kurnool**	17503.31	9696.79	9782.49	1887.30	1497.62	281.94	1396.23	4719.40	362.36	5081.77
5	**Prakasam**	17389.37	657.16	666.10	173.57	127.15	44.96	96.95	223.48	8.56	232.03
	Sub Total	**73432.16**	**25771.72**	**26220.05**	**3869.47**	**4612.03**	**1097.01**	**4096.03**	**12545.52**	**2168.11**	**14713.63**
ii)	**TELANGANA**										
1	**Hyderabad**	173.43	173.43	217.00	0.00	217.00	0.00	0.00	0.00	0.00	0.00
2	**Karimnagar**	11539.77	8.83	9.05	1.92	1.47	0.58	1.86	3.22	0.89	4.11
3	**Khammam**	15646.02	4864.63	4124.67	1730.83	616.62	211.27	377.91	1188.05	116.53	1304.57
4	**Mahbubnagar**	17974.02	17974.02	18431.64	2555.96	1917.63	525.05	5077.25	8355.75	678.78	9034.53
5	**Medak**	9489.96	361.03	369.02	34.77	49.79	19.54	91.24	173.68	27.62	201.31
6	**Nalgonda**	13742.14	13742.14	14240.00	830.73	2496.96	1007.36	4195.17	5709.78	981.86	6691.64
7	**RANGAREDDI**	7358.88	6853.56	6978.47	680.57	1307.39	586.18	2456.55	1947.79	221.06	2168.85
8	**Warangal**	12447.42	6199.23	6397.74	1847.77	615.66	528.47	955.33	2450.49	633.33	3083.82
	Sub Total	**88371.64**	**50176.87**	**50767.58**	**7682.55**	**7222.52**	**2878.46**	**13155.30**	**19828.76**	**2660.07**	**22488.83**
iii)	**KARNATAKA**										
1	**Bagalkot**	6432.04	6432.04	6588.77	811.26	536.42	57.38	663.83	4519.88	983.07	5502.95
2	**Belgaum**	13120.75	12113.73	12412.00	1758.09	1054.09	364.08	1942.83	7292.91	2136.21	9429.11
3	**Bellary**	8311.09	8311.09	8131.96	970.17	1637.68	339.17	778.23	4406.71	1115.52	5522.23
4	**Bidar**	5293.88	824.76	844.04	43.17	65.27	68.98	165.69	500.94	118.67	619.61
5	**Bijapur**	10261.00	10261.00	6552.96	4945.98	252.54	524.30	197.85	632.29	0.49	632.78
6	**Chikmagalur**	7167.73	6264.50	6310.84	1765.70	628.41	1115.91	225.01	2575.81	579.01	3154.82
7	**Chitradurga**	8360.22	8360.22	7707.02	737.19	808.53	1216.69	1056.76	3887.85	811.34	4699.19
8	**DAKSHIN KANNAD**	4578.68	1.09	1.14	0.31	0.30	0.16	0.03	0.34	0.06	0.40
9	**DAVANGERE**	5875.62	5875.62	5975.97	899.18	603.25	330.18	302.55	3840.81	417.05	4257.86
10	**Dharwad**	4202.26	2780.03	2827.02	233.10	185.53	42.50	99.54	2266.35	1169.35	3435.70
11	**Gadag**	4563.79	4563.79	4657.15	326.14	221.09	38.60	159.41	3911.91	1067.05	4978.96
12	**Gulbarga**	10687.27	10687.08	10941.01	353.15	758.81	364.02	1791.64	7673.38	1378.90	9052.28
13	**Hassan**	6789.18	1384.62	1351.34	119.87	224.79	110.23	194.22	702.24	149.39	851.63
14	**Haveri**	4743.98	4623.62	4728.47	462.50	381.57	170.44	186.70	3527.26	684.74	4212.00
15	**Koppal**	5468.71	5468.71	5524.95	294.51	656.53	206.20	490.50	3877.21	720.15	4597.36
16	**Raichur**	8276.99	8276.99	8358.43	181.67	406.47	442.12	2599.93	4728.24	892.81	5621.05
17	**Shimoga**	8361.30	5694.09	5773.45	1885.40	694.76	1407.24	265.56	1520.49	188.70	1709.19
18	**Tumkur**	10543.89	3897.56	3935.88	167.00	582.13	591.91	799.22	1795.62	267.53	2063.15
19	**Udupi**	3841.79	3.06	2.84	0.80	0.43	0.73	0.10	0.78	0.11	0.89
20	**UTTAR KANNAD**	10048.65	664.06	677.15	537.66	33.57	18.43	14.13	73.37	7.29	80.66
21	**Yadgir**	5163.02	5163.02	5160.88	337.73	575.77	148.77	808.97	3289.64	776.73	4066.37
	Sub Total	**152091.84**	**111650.68**	**108463.28**	**16830.56**	**10307.94**	**7558.06**	**12742.70**	**61024.01**	**13464.16**	**74488.18**
iv)	**MAHARASHTRA**										
1	**Ahmadnagar**	16510.41	6130.16	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
2	**Bid**	10244.73	1446.56	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
3	**Kolhapur**	7500.31	7237.44	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
4	**Latur**	7009.52	2.45	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
5	**Osmanabad**	7347.20	4366.70	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
6	**Pune**	15185.75	14790.56	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
7	**Raigarh**	6942.67	2.53	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
8	**Ratnagiri**	8050.94	14.49	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
9	**Sangli**	8349.99	8346.19	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
10	**Satara**	10223.37	10187.31	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
11	**Sindhudurg**	4966.78	124.14	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
12	**Solapur**	14495.87	14495.87	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
13	**Thane**	9208.22	2.55	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
	Sub Total	**126035.76**	**67146.95**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**	**N.A**
	Grand Total	**439931.40**	**254746.22**	**185450.91**	**28382.58**	**22142.50**	**11533.53**	**29994.02**	**93398.29**	**18292.34**	**111690.63**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Note : (1)Totals may not tally due to rounding off.

Note : (2) N.A.: Not availabe data.

Note : (3)Estimated on the basis of the percentage of the area of each district, within the basin, to the district as a whole.

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
VI	**Basin : Cauvery**										
i)	**KARNATAKA**										
1	**BENGALURU URBAN**	2175.82	987.82	987.04	22.95	588.85	78.14	128.45	168.65	18.43	187.08
2	**Bangalore Rural**	2294.62	978.92	979.16	48.30	241.43	90.47	120.24	478.72	20.21	498.93
3	**Chamarajanagar**	5688.19	5688.19	5699.01	2756.10	460.61	351.28	520.39	1610.63	336.29	1946.92
4	**CHIKBALLAPUR**	4188.56	6.40	6.18	0.76	1.02	1.02	0.40	2.97	0.34	3.31
5	**Chikmagalur**	7167.73	751.01	756.57	211.68	75.34	133.78	26.97	308.80	69.41	378.21
6	**Hassan**	6789.18	4941.78	4823.02	427.82	802.29	393.41	693.18	2506.32	533.19	3039.51
7	**Kodagu**	4115.60	2898.68	2893.15	947.99	388.96	304.12	89.55	1162.54	167.12	1329.66
8	**Mandya**	4942.61	4942.61	4982.44	247.65	850.11	776.32	1012.73	2095.63	501.35	2596.98
9	**Mysore**	6319.07	6319.07	6763.82	628.51	1202.27	740.86	461.32	3730.86	1175.19	4906.05
10	**Ramanagara**	3511.62	3511.62	3559.12	699.46	520.10	297.90	437.08	1604.58	116.39	1720.97
11	**Tumkur**	10543.89	3992.00	4031.25	171.04	596.24	606.26	818.58	1839.13	274.01	2113.14
	Sub Total	**57736.89**	**35018.10**	**35480.75**	**6162.26**	**5727.21**	**3773.55**	**4308.91**	**15508.83**	**3211.94**	**18720.77**
ii)	**KERALA**										
1	**Idukki**	5106.26	385.72	329.60	149.88	20.28	1.74	2.33	155.37	50.65	206.02
2	**Kannur**	2957.80	1.16	1.17	0.19	0.18	0.03	0.03	0.74	0.15	0.88
3	**Kozhikode**	2347.84	4.42	4.42	0.78	0.69	0.06	0.07	2.82	0.98	3.80
4	**Malappuram**	3599.11	1.90	1.88	0.55	0.31	0.03	0.07	0.92	0.36	1.28
5	**Palakkad**	4542.91	619.06	609.92	185.68	91.56	33.43	38.60	260.65	137.04	397.69
6	**Wayanad**	2141.18	1936.14	1925.72	712.42	152.40	8.97	27.31	1024.62	615.88	1640.50
	Sub Total	**20695.10**	**2948.40**	**2872.70**	**1049.49**	**265.42**	**44.26**	**68.40**	**1445.12**	**805.06**	**2250.18**
iii)	**TAMIL NADU**										
1	**Ariyalur**	1970.10	1623.55	1593.78	6.09	337.38	237.62	203.48	809.22	87.72	896.94
2	**Coimbatore**	4708.71	2569.37	2577.29	610.44	444.40	64.91	510.27	947.26	20.28	967.54
3	**Cuddalore**	3725.96	604.91	597.09	2.30	119.43	33.07	84.04	358.24	181.11	539.35
4	**Dharmapuri**	4529.54	1906.74	1893.37	691.11	284.84	49.93	226.15	641.33	319.71	961.04
5	**Dindigul**	6164.99	4429.05	4502.08	998.05	743.04	146.31	976.89	1637.79	50.38	1688.16
6	**Erode**	5802.54	5802.54	5722.64	2275.11	596.22	27.84	1057.85	1765.62	178.30	1943.92
7	**Karur**	2928.71	2928.71	2895.57	61.87	403.69	778.55	827.94	823.52	56.14	879.66
8	**Krishnagiri**	5142.53	1909.10	1909.37	757.19	244.73	76.29	189.35	641.81	151.71	793.52
9	**Nagapattinam**	2516.24	2516.20	2715.79	46.33	811.62	91.49	280.56	1485.80	1229.03	2714.83
10	**Namakkal**	3434.37	3074.96	3014.81	393.14	566.75	136.03	523.18	1395.71	464.10	1859.82
11	**Perambalur**	1768.81	625.19	621.15	57.55	110.73	20.51	57.53	374.84	56.74	431.59
12	**Pudukkottai**	4740.11	734.16	722.26	36.45	227.67	50.70	223.37	184.07	7.54	191.61
13	**Salem**	5247.41	3027.08	3002.79	725.02	589.82	77.54	340.50	1269.91	488.13	1758.04
14	**Thanjavur**	3438.78	2221.95	2194.68	21.90	542.08	124.68	311.84	1194.17	548.25	1742.43
15	**The Nilgiris**	2572.79	2213.40	2189.36	1226.61	114.87	88.52	111.31	648.06	1.48	649.54
16	**Thiruvarur**	2302.70	2300.40	2095.00	24.50	373.91	40.95	109.79	1545.85	1739.54	3285.40
17	**Tiruchirappalli**	4564.08	4032.11	3890.54	324.87	864.31	129.38	1146.49	1425.49	157.91	1583.40
18	**Tiruppur**	5266.55	4983.33	4916.19	455.78	676.41	56.11	2012.66	1715.23	31.89	1747.12
	Sub Total	**70824.92**	**47502.75**	**47053.75**	**8714.30**	**8051.89**	**2230.42**	**9193.19**	**18863.94**	**5769.96**	**24633.90**
iv)	**PONDICHERY**										
1	**Karaikal**	154.98	154.98	160.12	0.00	55.81	28.66	32.78	42.87	17.97	60.84
	Sub Total	**154.98**	**154.98**	**160.12**	**0.00**	**55.81**	**28.66**	**32.78**	**42.87**	**17.97**	**60.84**
	Grand Total	**149411.89**	**85624.23**	**85567.32**	**15926.05**	**14100.34**	**6076.89**	**13603.28**	**35860.76**	**9804.92**	**45665.69**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
VII	**Basin : Pennar**										
i)	**ANDHRA PRADESH**										
1	**Anantapur**	18987.72	14802.13	14913.05	1535.57	2464.08	497.34	3788.08	6627.98	545.39	7173.37
2	**Chittoor**	14957.01	4929.17	4993.10	1489.65	1026.71	365.80	886.14	1224.79	192.96	1417.75
3	**Kurnool**	17503.31	7747.18	7815.65	1507.84	1196.51	225.25	1115.51	3770.53	289.51	4060.04
4	**Prakasam**	17389.37	945.21	958.07	249.66	182.88	64.66	139.44	321.43	12.31	333.74
5	**SPSR Nellore**	13090.71	4151.44	4146.78	862.27	1253.62	352.59	289.73	1388.57	79.94	1468.52
6	**YSR Cudappah**	14969.72	14877.73	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
	Sub Total	**96897.84**	**47452.86**	**32826.64**	**5644.99**	**6123.81**	**1505.64**	**6218.90**	**13333.31**	**1120.11**	**14453.42**
ii)	**KARNATAKA**										
1	**Bangalore Rural**	2294.62	380.08	2295.19	113.22	565.92	212.06	281.85	1122.14	47.37	1169.51
2	**CHIKBALLAPUR**	4188.56	3367.63	4045.01	497.04	670.45	667.75	264.81	1944.96	224.00	2168.96
3	**Kolar**	3968.44	388.52	3749.66	206.20	745.47	528.24	641.87	1627.88	83.82	1711.70
4	**Tumkur**	10543.89	2654.33	10647.55	451.77	1574.82	1601.28	2162.08	4857.60	723.74	5581.34
	Sub Total	**20995.51**	**6790.56**	**20737.41**	**1268.23**	**3556.66**	**3009.33**	**3350.61**	**9552.58**	**1078.93**	**10631.51**
	Grand Total	**117893.35**	**54243.42**	**53564.05**	**6913.22**	**9680.47**	**4514.97**	**9569.51**	**22885.89**	**2199.04**	**25084.93**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
VIII	**Basin : East Flowing Rivers from Mahanadi to Pennar**										
i)	**ANDHRA PRADESH**										
1	**East Godavari**	10571.11	4681.80	5671.27	2066.04	1063.34	196.19	415.40	1930.31	1078.26	3008.57
2	**Guntur**	11186.51	4641.13	4725.97	671.87	862.73	279.25	679.92	2232.20	573.85	2806.06
3	**Krishna**	8365.25	3678.45	3837.52	335.01	842.77	184.95	449.57	2025.21	654.30	2679.52
4	**Kurnool**	17503.31	59.34	59.86	11.55	9.16	1.73	8.54	28.88	2.22	31.10
5	**Prakasam**	17389.37	15786.99	16001.82	4169.80	3054.53	1079.98	2328.93	5368.58	205.53	5574.11
6	**SPSR Nellore**	13090.71	2848.33	2845.13	591.61	860.11	241.91	198.78	952.71	54.85	1007.56
7	**Srikakulam**	5730.80	5730.80	5837.00	686.41	1506.93	89.95	495.25	3058.46	1030.04	4088.50
8	**VISAKHAPATANAM**	11115.36	7501.09	7531.89	2977.16	1621.61	310.53	750.83	1871.76	495.15	2366.91
9	**Vizianagaram**	5821.45	5821.45	6539.00	1193.03	1510.84	200.09	918.27	2716.77	1004.98	3721.75
10	**West Godavari**	7582.74	5900.34	6619.26	1034.15	1267.64	263.31	349.82	3704.34	1689.88	5394.21
	Sub Total	**108356.61**	**56649.72**	**59668.72**	**13736.63**	**12599.66**	**2847.89**	**6595.33**	**23889.22**	**6789.06**	**30678.28**
ii)	**TELANGANA**										
1	**Khammam**	15646.02	784.64	665.29	279.17	99.46	34.08	60.95	191.63	18.80	210.42
	Sub Total	**15646.02**	**784.64**	**665.29**	**279.17**	**99.46**	**34.08**	**60.95**	**191.63**	**18.80**	**210.42**
iii)	**ODISHA**										
1	**Gajapati**	3928.20	3928.20	3091.99	520.00	1560.00	250.00	190.00	571.99	67.26	639.25
2	**Ganjam**	8197.71	7698.21	5706.27	478.92	1389.82	507.10	939.07	2391.36	595.97	2987.33
3	**Kalahandi**	7633.06	645.40	491.37	95.55	60.88	55.81	99.77	179.37	29.01	208.37
4	**Kandhamal**	7770.03	1962.90	1105.78	431.99	310.73	75.79	194.52	92.75	2.46	95.22
5	**Khordha**	2654.72	192.40	197.21	23.92	47.83	33.34	19.57	72.55	15.21	87.76
6	**Koraput**	8180.27	1486.94	1102.53	165.41	345.37	149.05	132.69	310.00	52.62	362.62
7	**Nayagarh**	3755.00	296.34	195.98	37.09	36.30	25.25	22.89	74.45	17.96	92.41
8	**Rayagada**	7126.04	6150.44	4933.53	828.57	2140.47	267.56	673.21	1023.72	42.29	1066.01
	Sub Total	**49245.03**	**22360.83**	**16824.65**	**2581.45**	**5891.40**	**1363.89**	**2271.72**	**4716.18**	**822.78**	**5538.96**
	Grand Total	**173247.66**	**79795.19**	**77158.66**	**16597.25**	**18590.52**	**4245.86**	**8928.01**	**28797.02**	**7630.63**	**36427.65**

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
IX	**Basin : East Flowing Rivers from Pennar to Kanyakumari**										
i)	**ANDHRA PRADESH**										
1	**Chittoor**	14957.01	10027.85	10157.91	3030.53	2088.74	744.19	1802.76	2491.69	392.57	2884.26
2	**SPSR Nellore**	13090.71	6090.94	6084.10	1265.11	1839.29	517.31	425.09	2037.30	117.29	2154.59
3	**YSR Cudappah**	14969.72	92.00	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
	Sub Total	**43017.44**	**16210.79**	**16242.01**	**4295.64**	**3928.03**	**1261.50**	**2227.85**	**4528.99**	**509.86**	**5038.85**
ii)	**KARNATAKA**										
1	**BENGALURU URBAN**	2175.82	1188.00	1187.06	27.60	708.17	93.97	154.49	202.83	22.16	224.99
2	**Bangalore Rural**	2294.62	935.62	935.85	46.16	230.75	86.47	114.92	457.55	19.31	476.86
3	**CHIKBALLAPUR**	4188.56	814.53	786.61	96.66	130.38	129.85	51.50	378.23	43.56	421.79
4	**Kolar**	3968.44	3579.91	3382.55	186.01	672.48	476.52	579.03	1468.50	75.61	1544.12
	Sub Total	**12627.44**	**6518.06**	**6292.08**	**356.43**	**1741.79**	**786.82**	**899.93**	**2507.11**	**160.65**	**2667.76**
iii)	**KERALA**										
1	**Idukki**	5106.26	38.13	32.58	14.82	2.00	0.17	0.23	15.36	5.01	20.37
2	**Kollam**	2556.16	11.68	11.37	3.72	1.65	0.12	0.23	5.65	1.04	6.69
3	**Pathanamthitta**	2709.55	4.92	4.82	2.82	0.38	0.03	0.13	1.46	0.41	1.87
4	**Thiruvananthapuram**	2246.81	4.33	4.22	0.96	0.73	0.01	0.08	2.44	0.68	3.12
	Sub Total	**12618.78**	**59.06**	**52.98**	**22.32**	**4.76**	**0.34**	**0.66**	**24.90**	**7.14**	**32.04**
iv)	**TAMIL NADU**										
1	**Ariyalur**	1970.10	346.55	340.20	1.30	72.01	50.72	43.43	172.73	18.72	191.45
2	**Chennai**	128.00	128.00	170.98	3.00	167.98	0.00	0.00	0.00	0.00	0.00
3	**Cuddalore**	3725.96	3121.05	3080.72	11.85	616.22	170.65	433.63	1848.38	934.43	2782.81
4	**Dharmapuri**	4529.54	2622.80	2604.40	950.66	391.80	68.69	311.08	882.18	439.77	1321.95
5	**Dindigul**	6164.99	1735.94	1764.56	391.18	291.23	57.34	382.89	641.92	19.74	661.67
6	**KANCHIPURAM**	4475.20	4475.19	4432.09	238.60	1627.67	414.37	1079.58	1071.88	242.38	1314.26
7	**Kanniyakumari**	1746.80	70.81	67.78	21.95	13.55	0.37	1.34	30.57	2.93	33.51
8	**Krishnagiri**	5142.53	3233.43	3233.89	1282.45	414.51	129.21	320.69	1087.03	256.95	1343.98
9	**Madurai**	3767.70	3767.63	3741.66	484.72	885.98	172.59	964.24	1234.13	150.14	1384.26
10	**Namakkal**	3434.37	359.41	352.38	45.95	66.24	15.90	61.15	163.14	54.25	217.38
11	**Perambalur**	1768.81	1143.62	1136.24	105.26	202.55	37.51	105.23	685.68	103.80	789.47
12	**Pudukkottai**	4740.11	4005.95	3941.03	198.90	1242.31	276.62	1218.83	1004.37	41.16	1045.53
13	**Ramanathapuram**	4040.52	4040.51	4089.56	44.88	915.70	345.67	1108.61	1674.71	0.00	1674.71
14	**Salem**	5247.41	2220.33	2202.51	531.80	432.62	56.87	249.75	931.47	358.04	1289.51
15	**Sivaganga**	4325.62	4325.62	4189.00	165.33	1272.78	260.25	1511.09	979.55	1.18	980.73
16	**Thanjavur**	3438.78	1216.83	1201.89	12.00	296.87	68.28	170.77	653.98	300.25	954.22
17	**Theni**	2909.55	2907.60	3240.13	1347.23	368.18	45.25	348.56	1130.91	130.83	1261.74
18	**Thiruvallur**	3377.77	3377.77	3422.43	197.36	1235.47	221.19	726.84	1041.57	474.41	1515.98
19	**Thoothukkudi**	4763.91	4763.91	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
20	**Tiruchirappalli**	4564.08	531.97	513.29	42.86	114.03	17.07	151.26	188.07	20.83	208.90
21	**Tirunelveli**	6998.99	6982.02	6742.11	1274.48	1328.72	488.37	1903.91	1746.62	316.91	2063.53
22	**Tiruvannamalai**	6187.67	6187.67	6312.05	1528.10	1170.71	133.04	1358.77	2121.43	756.46	2877.89
23	**Vellore**	6056.53	6056.53	5920.18	1622.86	1011.68	125.32	1518.22	1642.10	382.41	2024.51
24	**VILLUPURAM**	7211.86	7211.85	7222.02	716.97	1927.66	200.54	972.58	3404.28	1424.87	4829.14
25	**Virudhunagar**	4487.16	4487.15	4243.22	264.66	750.36	148.78	1763.29	1316.14	74.43	1390.57
	Sub Total	**105203.96**	**79320.14**	**74164.32**	**11484.35**	**16816.83**	**3504.60**	**16705.74**	**25652.81**	**6504.89**	**32157.70**
v)	**PONDICHERY**										
1	**PONDICHERRY**	301.19	301.19	293.78	3.99	122.75	21.54	50.12	95.38	85.62	181.00
	Sub Total	**301.19**	**301.19**	**293.78**	**3.99**	**122.75**	**21.54**	**50.12**	**95.38**	**85.62**	**181.00**
	Grand Total	**173768.81**	**102409.24**	**97045.17**	**16162.73**	**22614.16**	**5574.79**	**19884.30**	**32809.19**	**7268.16**	**40077.35**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
X	**Basin : Narmada**										
i)	**GUJARAT**										
1	**Bharuch**	5083.67	1849.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Dohad**	3458.35	60.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Narmada**	2719.36	2321.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Panch Mahals**	5095.62	137.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Surat**	4174.64	168.82	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Vadodara**	7234.95	3788.50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**27766.59**	**8326.35**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**										
1	**Alirajpur**	3217.78	3001.03	3568.83	1129.86	690.76	96.76	43.27	1608.19	358.86	1967.05
2	**Anuppur**	3637.40	517.37	532.92	108.74	87.84	38.28	90.36	207.71	45.32	253.02
3	**Balaghat**	8897.36	2210.54	2296.91	1254.86	142.98	134.06	114.97	650.03	201.28	851.32
4	**Barwani**	5234.28	3841.08	3888.18	1343.40	745.75	82.71	23.16	1693.15	494.25	2187.41
5	**Betul**	9690.38	3712.61	3861.12	1522.49	278.89	255.12	144.74	1659.87	646.97	2306.83
6	**Bhopal**	2618.98	3.33	3.53	0.56	0.49	0.49	0.08	1.92	1.00	2.92
7	**Burhanpur**	3084.12	368.60	409.63	241.37	25.98	15.54	4.11	122.64	29.07	151.71
8	**Chhindwara**	11361.38	3389.22	3534.75	1423.99	209.84	253.24	128.88	1518.81	649.61	2168.42
9	**Damoh**	7068.37	417.79	430.64	157.89	54.16	26.21	3.90	188.48	130.92	319.40
10	**Dewas**	6700.19	3740.87	3915.56	1153.70	266.99	231.61	3.49	2259.77	1847.51	4107.28
11	**Dhar**	7842.30	4756.36	4970.52	715.79	829.39	354.65	27.41	3043.28	1917.14	4960.42
12	**Dindori**	5543.20	4598.04	2977.34	210.86	324.58	251.14	524.68	1666.08	715.28	2381.36
13	**Khandwa**	7169.74	6469.19	6998.31	2754.90	867.74	532.63	121.27	2721.77	1365.77	4087.54
14	**Harda**	3192.55	3127.44	3238.37	1013.29	255.34	139.04	9.09	1821.61	1743.71	3565.31
15	**Hoshangabad**	6456.42	6456.42	6686.89	2561.35	472.22	414.04	93.82	3145.46	3336.30	6481.76
16	**Indore**	3765.95	1013.68	1031.18	140.53	133.57	55.98	27.04	674.07	586.00	1260.07
17	**Jabalpur**	4911.29	4619.32	4888.58	730.31	740.59	597.35	272.37	2547.95	1480.94	4028.89
18	**Jhabua**	3302.18	7.92	7.03	0.26	1.62	0.55	0.07	4.53	1.18	5.71
19	**Katni**	4867.17	1093.93	1108.26	218.29	169.44	158.55	91.26	470.72	195.33	666.04
20	**Mandla**	7201.48	6371.63	8542.94	5247.94	482.14	402.83	451.74	1958.29	827.27	2785.56
21	**Narsinghpur**	4947.28	4818.19	5002.48	1326.31	264.27	325.26	69.24	3017.41	1821.25	4838.66
22	**Raisen**	8172.10	4494.04	4667.46	1834.94	243.56	194.15	27.65	2367.16	1536.91	3904.07
23	**Sagar**	9858.18	371.79	385.72	112.39	26.76	32.73	7.41	206.44	142.35	348.79
24	**Sehore**	6317.41	3143.66	3266.21	858.95	261.71	162.25	7.12	1976.18	1775.50	3751.68
25	**Seoni**	8422.70	2153.12	2237.81	839.83	157.51	137.33	104.94	998.20	441.47	1439.67
26	**Umaria**	4411.61	0.47	0.48	0.25	0.05	0.03	0.04	0.11	0.04	0.15
27	**Khargone**	7757.16	7397.29	7806.78	2354.19	792.81	730.62	103.30	3825.86	1730.33	5556.19
	Sub Total	**165648.96**	**82094.93**	**86258.44**	**29257.23**	**8526.97**	**5623.14**	**2495.41**	**40355.69**	**24021.56**	**64377.25**
iii)	**CHHATISGARH**										
1	**Bilaspur**	8022.86	0.71	0.51	0.19	0.03	0.06	0.03	0.20	0.05	0.25
2	**Kabirdham**	4061.73	596.41	652.99	278.18	39.32	48.19	16.35	270.94	121.12	392.06
3	**Rajnandgaon**	7764.54	78.58	81.19	26.18	7.01	7.88	4.84	35.28	12.09	47.37
	Sub Total	**19849.13**	**675.70**	**734.69**	**304.56**	**46.36**	**56.14**	**21.21**	**306.42**	**133.26**	**439.68**
iv)	**MAHARASHTRA**										
1	**Dhule**	6925.51	7.95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Nandurbar**	5684.20	1572.12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**12609.71**	**1580.07**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**225874.39**	**92677.05**	**86993.14**	**29561.78**	**8573.34**	**5679.28**	**2516.63**	**40662.11**	**24154.82**	**64816.93**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
XI	**Basin : Tapi**										
i)	**GUJARAT**										
1	**Narmada**	2719.36	398.16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Bharuch**	5083.67	1034.35	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Surat**	4174.64	2654.37	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Tapi**	3040.24	1686.10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**The Dangs**	1700.82	25.75	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**16718.73**	**5798.73**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**										
1	**Harda**	3192.55	65.11	67.42	21.10	5.32	2.89	0.19	37.92	36.30	74.23
2	**Burhanpur**	3084.12	2715.52	3017.78	1778.20	191.36	114.45	30.25	903.51	214.16	1117.67
3	**Betul**	9690.38	3848.03	4001.95	1578.03	289.06	264.43	150.02	1720.41	670.57	2390.98
4	**Khandwa**	7169.74	700.55	757.85	298.33	93.97	57.68	13.13	294.74	147.90	442.64
5	**Khargone**	7757.16	359.87	379.79	114.53	38.57	35.54	5.03	186.12	84.18	270.30
6	**Barwani**	5234.28	1393.21	1410.29	487.27	270.49	30.00	8.40	614.13	179.27	793.40
	Sub Total	**36128.23**	**9082.29**	**9635.09**	**4277.45**	**888.77**	**505.00**	**207.02**	**3756.84**	**1332.38**	**5089.22**
iii)	**MAHARASHTRA**										
1	**Washim**	5017.05	1056.31	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Nashik**	15021.09	5959.21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Nandurbar**	5684.20	4111.38	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Jalna**	7510.09	123.51	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Jalgaon**	11349.74	11334.09	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Dhule**	6925.51	6864.04	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Buldana**	9409.67	5613.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Aurangabad**	9772.28	1046.84	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Akola**	5214.95	5214.73	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Amravati**	11765.11	7744.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**87669.69**	**49067.70**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**140516.65**	**63948.72**	**9635.09**	**4277.45**	**888.77**	**505.00**	**207.02**	**3756.84**	**1332.38**	**5089.22**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

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					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
XII	**Basin : West Flowing Rivers from Tapi to Tadri**										
i)	**DADRA & NAGAR HAVELI**										
1	**DADRA AND NAGAR HAVELI**	477.07	477.07	488.82	203.52	37.57	13.86	44.49	189.38	45.05	234.43
	Sub Total	**477.07**	**477.07**	**488.82**	**203.52**	**37.57**	**13.86**	**44.49**	**189.38**	**45.05**	**234.43**
ii)	**DAMAN & DIU**										
1	**Daman**	70.98	70.98	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**70.98**	**70.98**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
iii)	**GOA**										
1	**North Goa**	1650.18	1650.18	1422.08	319.11	181.20	170.43	87.25	664.09	140.59	804.68
2	**South Goa**	1917.11	1917.11	2189.05	935.62	190.17	373.75	52.51	637.00	131.64	768.64
	Sub Total	**3567.29**	**3567.29**	**3611.13**	**1254.73**	**371.37**	**544.18**	**139.76**	**1301.09**	**272.23**	**1573.32**
iv)	**GUJARAT**										
1	**Navsari**	2146.71	2146.71	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Surat**	4174.64	1351.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Tapi**	3040.24	1354.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**The Dangs**	1700.82	1675.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Valsad**	2894.91	2894.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**13957.32**	**9422.26**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
v)	**KARNATAKA**										
1	**Belgaum**	13120.75	1007.02	1031.82	146.15	87.63	30.27	161.51	606.26	177.58	783.85
2	**Dharwad**	4202.26	1422.24	1446.28	119.25	94.91	21.74	50.93	1159.45	598.23	1757.68
3	**Haveri**	4743.98	120.36	123.09	12.04	9.93	4.44	4.86	91.82	17.82	109.64
4	**Shimoga**	8361.30	15.01	15.22	4.97	1.83	3.71	0.70	4.01	0.50	4.51
5	**UTTAR KANNAD**	10048.65	8350.89	8515.55	6761.35	422.21	231.70	177.65	922.64	91.68	1014.32
	Sub Total	**40476.94**	**10915.52**	**11131.96**	**7043.76**	**616.52**	**291.86**	**395.65**	**2784.17**	**885.82**	**3669.99**
vi)	**MAHARASHTRA**										
1	**Ahmadnagar**	16510.41	12.14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Dhule**	6925.51	53.52	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Kolhapur**	7500.31	262.87	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Mumbai**	144.60	144.60	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Mumbai (Suburban)**	438.28	438.28	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Nandurbar**	5684.20	0.69	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Nashik**	15021.09	2088.62	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Pune**	15185.75	313.94	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Raigarh**	6942.67	6940.14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Ratnagiri**	8050.94	8036.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Sangli**	8349.99	3.80	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Satara**	10223.37	36.06	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Sindhudurg**	4966.78	4842.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
14	**Thane**	9208.22	9202.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**115152.12**	**32375.79**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**173701.72**	**56828.91**	**15231.91**	**8502.01**	**1025.46**	**849.90**	**579.90**	**4274.64**	**1203.10**	**5477.74**

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(Area in Sq.Km)

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					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
XIII	**Basin : West Flowing Rivers from Tadri to Kanyakumari**										
i)	**KARNATAKA**										
1	**Chikmagalur**	7167.73	152.22	153.35	42.90	15.27	27.12	5.47	62.59	14.07	76.66
2	**DAKSHIN KANNAD**	4578.68	4577.59	4772.67	1284.45	1274.61	675.26	127.05	1411.30	249.85	1661.15
3	**Hassan**	6789.18	462.78	451.66	40.06	75.13	36.84	64.91	234.71	49.93	284.64
4	**Kodagu**	4115.60	1216.92	1214.60	397.98	163.29	127.67	37.59	488.06	70.16	558.22
5	**Shimoga**	8361.30	2652.20	2689.17	878.18	323.61	655.47	123.70	708.21	87.89	796.11
6	**Udupi**	3841.79	3838.73	3561.62	1000.22	538.36	917.88	127.32	977.84	136.61	1114.45
7	**UTTAR KANNAD**	10048.65	1033.70	1054.08	836.94	52.26	28.68	21.99	114.21	11.35	125.56
	Sub Total	**44902.93**	**13934.14**	**13897.15**	**4480.75**	**2442.53**	**2468.92**	**508.03**	**3996.92**	**619.86**	**4616.78**
ii)	**KERALA**										
1	**Alappuzha**	1454.48	1454.48	1410.11	0.00	379.56	137.88	56.77	835.90	177.69	1013.59
2	**Ernakulam**	2454.58	2454.57	3058.25	706.17	547.53	126.46	187.21	1490.88	168.58	1659.46
3	**Idukki**	5106.26	4682.42	4001.11	1819.44	246.20	21.10	28.29	1886.08	614.89	2500.97
4	**Kannur**	2957.80	2956.64	2969.95	487.15	452.87	73.13	75.41	1881.39	369.90	2251.30
5	**Kasaragod**	1964.67	1964.67	1991.66	56.25	336.62	90.64	47.57	1460.58	111.33	1571.91
6	**Kollam**	2556.16	2544.48	2476.51	810.66	359.57	27.07	49.23	1229.98	227.11	1457.09
7	**Kottayam**	2258.83	2258.83	2204.42	81.41	362.46	74.04	72.83	1613.68	403.38	2017.06
8	**Kozhikode**	2347.84	2343.42	2341.99	413.08	366.30	29.34	36.69	1496.58	520.20	2016.78
9	**Malappuram**	3599.11	3597.21	3552.58	1033.62	585.52	62.85	129.14	1741.45	689.11	2430.56
10	**Palakkad**	4542.91	3923.85	3865.92	1176.89	580.37	211.90	244.64	1652.12	868.60	2520.72
11	**Pathanamthitta**	2709.55	2704.62	2647.94	1549.32	207.90	17.91	72.05	800.77	227.78	1028.56
12	**Thiruvananthapuram**	2246.81	2242.48	2183.59	497.65	378.27	4.55	39.76	1263.36	350.17	1613.53
13	**Thrissur**	3071.57	3071.56	3029.18	1036.19	453.32	99.21	141.05	1299.42	438.87	1738.28
14	**Wayanad**	2141.18	205.04	203.94	75.45	16.14	0.95	2.89	108.51	65.22	173.73
	Sub Total	**39411.75**	**36404.27**	**35937.16**	**9743.27**	**5272.63**	**977.03**	**1183.54**	**18760.70**	**5232.84**	**23993.54**
iii)	**TAMIL NADU**										
1	**Coimbatore**	4708.71	2139.34	2145.93	508.27	370.03	54.05	424.87	788.72	16.88	805.60
2	**Kanniyakumari**	1746.80	1675.98	1604.21	519.59	320.64	8.72	31.68	723.57	69.45	793.02
3	**The Nilgiris**	2572.79	359.39	355.49	199.16	18.65	14.37	18.07	105.23	0.24	105.47
4	**Theni**	2909.55	1.95	2.17	0.90	0.25	0.03	0.23	0.76	0.09	0.85
5	**Tirunelveli**	6998.99	16.96	16.38	3.10	3.23	1.19	4.62	4.24	0.77	5.01
6	**Tiruppur**	5266.55	283.22	279.40	25.90	38.44	3.19	114.39	97.48	1.81	99.29
7	**Virudhunagar**	4487.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub Total	**28690.55**	**4476.84**	**4403.59**	**1256.93**	**751.23**	**81.55**	**593.87**	**1720.00**	**89.24**	**1809.24**
iv)	**PONDICHERY**										
1	**Mahe**	9.90	9.90	8.70	0.00	2.48	0.33	0.13	5.76	0.01	5.77
	Sub Total	**9.90**	**9.90**	**8.70**	**0.00**	**2.48**	**0.33**	**0.13**	**5.76**	**0.01**	**5.77**
	Grand Total	**113015.13**	**54825.15**	**54246.60**	**15480.95**	**8468.87**	**3527.82**	**2285.57**	**24483.38**	**5941.95**	**30425.33**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 14 : Land Utilisation Pattern by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Reporting Area For Land Utilisation	Classification of Reporting Area					Area Sown more than once	Total Cropped Area
					Forest	Not available for Cultivation	Other uncultivated Lands Excluding Fallow Lands	Fallow Lands	Net Area Sown		
1	2	3	4	5	6	7	8	9	10	11	12
XIV	**Basin : Mahi**										
i)	**GUJARAT**										
1	**Anand**	2806.43	996.53	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Bharuch**	5083.67	2199.42	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Dohad**	3458.35	3397.99	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Kheda**	3843.53	518.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Panch Mahals**	5095.62	4889.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Sabar Kantha**	7140.29	26.43	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Vadodara**	7234.95	3446.45	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**34662.84**	**15474.34**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**										
1	**Alirajpur**	3217.78	216.75	257.76	81.60	49.89	6.99	3.12	116.15	25.92	142.07
2	**Dhar**	7842.30	1505.16	1572.93	226.51	262.46	112.23	8.68	963.05	606.68	1569.73
3	**Jhabua**	3302.18	3294.25	2923.53	108.84	671.85	229.11	29.81	1883.92	492.76	2376.69
4	**Neemuch**	4001.43	29.18	28.70	6.88	6.47	1.90	0.09	13.35	8.96	22.31
5	**Ratlam**	4639.98	1820.86	1907.23	134.76	277.38	171.67	5.10	1318.32	793.63	2111.96
	Sub Total	**23003.67**	**6866.20**	**6690.15**	**558.60**	**1268.06**	**521.90**	**46.80**	**4294.80**	**1927.96**	**6222.76**
iii)	**RAJASTHAN**										
1	**Banswara**	4332.72	4332.72	4535.87	912.69	629.53	367.84	350.90	2274.91	1129.18	3404.09
2	**CHITTORGARH**	7500.49	133.03	133.16	21.59	20.77	27.69	6.01	57.09	40.27	97.36
3	**Dungarpur**	3640.43	3042.56	3222.67	538.87	754.90	481.10	344.68	1103.12	480.67	1583.78
4	**Pratapgarh**	4141.45	2993.52	2976.11	874.10	279.75	415.80	92.50	1313.96	824.31	2138.27
5	**Udaipur**	11459.12	5494.69	6656.73	1905.23	2264.88	979.41	342.68	1164.54	516.79	1681.33
	Sub Total	**31074.21**	**15996.52**	**17524.54**	**4252.48**	**3949.84**	**2271.84**	**1136.77**	**5913.61**	**2991.22**	**8904.83**
	Grant Total	**88740.72**	**38337.06**	**24214.69**	**4811.08**	**5217.89**	**2793.74**	**1183.57**	**10208.41**	**4919.18**	**15127.59**
XV	**Basin: Sabarmati**										
i)	**GUJARAT**										
1	**Ahmedabad**	7712.66	4718.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Anand**	2806.43	1785.66	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Banaskantha**	10247.55	506.28	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Bhavnagar**	8062.74	213.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Gandhinagar**	2055.07	2055.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Kheda**	3843.53	3325.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Mahesana**	4244.35	2087.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Panchmahal**	5095.62	68.67	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Rajkot**	10762.12	261.22	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Sabarkantha**	7140.29	7113.86	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Surendranagar**	10116.24	4603.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**72086.60**	**26738.20**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**RAJASTHAN**										
1	**Dungarpur**	3640.43	597.87	633.26	105.89	148.34	94.54	67.73	216.76	94.45	311.22
2	**Sirohi**	4961.34	54.66	57.06	17.13	11.03	4.66	6.37	17.88	7.13	25.01
3	**Udaipur**	11459.12	3289.85	3985.60	1140.72	1356.06	586.40	205.17	697.25	309.42	1006.67
	Sub Total	**20060.89**	**3942.38**	**4675.93**	**1263.74**	**1515.43**	**685.59**	**279.27**	**931.89**	**411.01**	**1342.89**
	Grant Total	**92147.49**	**30680.58**	**4675.93**	**1263.74**	**1515.43**	**685.59**	**279.27**	**931.89**	**411.01**	**1342.89**
XVI	**Basin : WFR of Kutch, Saurashtra Including Luni**										
i)	**GUJARAT**										
1	**Ahmadabad**	7712.66	2994.60	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Amreli**	7100.01	7100.01	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Anand**	2806.43	24.24	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Banas Kantha**	10247.55	9741.27	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Bhavnagar**	8062.74	7849.49	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Jamnagar**	10490.91	10490.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Junagadh**	8497.29	8497.29	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Kachchh**	40508.20	40508.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Mahesana**	4244.35	2156.99	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Patan**	5431.61	5431.61	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Porbandar**	2203.38	2203.38	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Rajkot**	10762.12	10500.90	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Surendranagar**	10116.24	5512.88	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**128183.49**	**113011.77**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**RAJASTHAN**										
1	**Ajmer**	8206.23	1870.76	1921.76	131.75	311.43	328.48	145.44	1004.67	270.65	1275.31
2	**Barmer**	27351.28	20773.88	21398.24	253.48	1552.33	3000.31	4078.24	12513.87	1507.68	14021.55
3	**Bhilwara**	10052.59	2.23	2.33	0.17	0.47	0.52	0.21	0.97	0.37	1.33
4	**CHITTORGARH**	7500.49	36.42	36.46	5.91	5.69	7.58	1.65	15.63	11.02	26.65
5	**Jaisalmer**	37070.06	2021.38	2093.44	14.94	312.40	1225.35	103.22	437.53	122.95	560.48
6	**JALORE**	10322.33	10322.33	10566.11	236.38	1229.44	683.15	1735.28	6681.86	2535.30	9217.16
7	**Jodhpur**	22037.60	13324.02	13642.31	50.65	1343.76	822.77	3038.46	8386.68	1992.53	10379.21
8	**Nagaur**	17026.59	6096.23	6315.59	67.35	522.14	298.41	984.19	4443.50	828.91	5272.42
9	**Pali**	11890.23	11890.23	12330.79	868.09	1982.99	1411.53	2021.24	6046.94	1213.51	7260.45
10	**Rajsamand**	4485.42	364.89	368.29	21.36	103.91	139.33	27.82	75.87	31.53	107.40
11	**Sikar**	7428.38	2.75	2.87	0.23	0.20	0.19	0.36	1.89	0.79	2.67
12	**Sirohi**	4961.34	4906.68	5122.41	1537.75	990.39	417.87	571.67	1604.72	640.15	2244.87
13	**Udaipur**	11459.12	205.67	249.17	71.31	84.78	36.66	12.83	43.59	19.34	62.93
	Sub Total	**179791.66**	**71817.47**	**74049.76**	**3259.37**	**8439.91**	**8372.15**	**12720.60**	**41257.72**	**9174.72**	**50432.44**
iii)	**Daman& Diu**										
1	**Diu**	34.39	34.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**34.39**	**34.39**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grant Total	**308009.54**	**184863.63**	**74049.76**	**3259.37**	**8439.91**	**8372.15**	**12720.60**	**41257.72**	**9174.72**	**50432.44**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
I	**Basin : Mahanadi**											
i)	**JHARKHAND**											
	Simdega	3639.71	145.66	0.21	0.00	0.21	0.10	0.16	0.42	0.58	0.61	1.50
	Sub Total	**3639.71**	**145.66**	**0.21**	**0.00**	**0.21**	**0.10**	**0.16**	**0.42**	**0.58**	**0.61**	**1.50**
ii)	**ODISHA**											
1	**Anugul**	6129.61	2060.53	7.09	14.54	21.63	0.81	9.01	0.55	9.56	0.00	32.00
2	**Balangir**	6332.43	6332.43	1.97	20.05	22.02	0.51	67.30	17.84	85.14	0.00	107.67
3	**Bargarh**	5583.76	5583.76	1395.52	72.74	1468.26	23.81	261.91	6.07	267.98	0.00	1760.05
4	**Boudh**	3006.39	3006.39	160.34	83.26	243.60	9.12	29.80	0.87	30.67	0.00	283.39
5	**Cuttack**	3802.97	3683.62	526.20	123.65	649.85	7.48	56.93	0.27	57.20	0.00	714.53
6	**Deogarh**	2726.66	271.58	2.79	0.94	3.73	0.50	0.37	0.02	0.39	0.00	4.62
7	**Dhenkanal**	4310.65	660.17	21.14	5.33	26.48	1.76	7.42	0.20	7.62	0.00	35.86
8	**Ganjam**	8197.71	499.49	58.98	30.56	89.54	16.71	3.28	0.40	3.68	0.00	109.94
9	**Jagatsinghapur**	1678.55	1678.55	551.01	8.17	559.18	2.55	20.62	0.57	21.19	0.00	582.92
10	**Jajapur**	2792.19	41.71	2.51	0.13	2.64	0.00	1.20	0.03	1.23	0.00	3.87
11	**Jharsuguda**	2036.85	2036.85	0.00	2.41	2.41	0.00	6.69	0.01	6.70	0.00	9.11
12	**Kalahandi**	7633.06	6570.09	530.73	75.84	606.57	36.81	20.19	3.50	23.70	0.00	667.07
13	**Kandhamal**	7770.03	5807.13	2.24	4.61	6.85	0.06	3.32	0.28	3.59	0.00	10.51
14	**Kendrapara**	2388.95	1292.70	198.34	0.04	198.37	0.00	34.75	0.75	35.50	0.00	233.87
15	**Khordha**	2654.72	2462.32	225.87	9.12	234.99	6.84	19.01	1.10	20.12	0.00	261.94
16	**NABARANGPUR**	5236.39	1655.37	0.34	10.94	11.29	0.07	14.34	0.71	15.05	0.00	26.41
17	**Nayagarh**	3755.00	3458.66	21.74	28.17	49.90	0.68	9.96	0.81	10.77	0.00	61.35
18	**Nuapada**	3728.43	3728.43	60.30	97.77	158.07	0.18	17.79	2.08	19.87	0.00	178.12
19	**Puri**	3433.02	3433.02	600.55	259.06	859.61	0.19	184.57	0.01	184.58	0.00	1044.38
20	**Rayagada**	7126.04	104.47	0.92	3.30	4.22	0.55	0.52	0.00	0.52	0.00	5.30
21	**Sambalpur**	6479.54	5266.85	155.70	36.27	191.97	9.40	38.32	0.60	38.92	0.00	240.28
22	**Sonepur**	2271.97	2271.97	677.59	5.21	682.80	0.83	81.27	0.18	81.45	0.00	765.08
23	**Sundargarh**	9353.52	3941.17	15.70	48.24	63.95	0.15	18.07	0.21	18.28	0.00	82.37
	Sub Total	**108428.44**	**65847.26**	**5217.58**	**940.36**	**6157.94**	**119.00**	**906.63**	**37.07**	**943.70**	**0.00**	**7220.64**
iii)	**MADHYA PRADESH**											
1	**Anuppur**	3637.40	121.78	0.10	0.00	0.10	0.01	0.46	0.42	0.88	0.43	1.42
2	**Balaghat**	8897.36	0.10	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.02
3	**Dindori**	5543.20	27.29	0.06	0.00	0.06	0.00	0.00	0.03	0.03	0.08	0.18
4	**Mandla**	7201.48	2.50	0.07	0.00	0.07	0.01	0.00	0.06	0.06	0.03	0.17
	Sub Total	**25279.44**	**151.67**	**0.25**	**0.00**	**0.25**	**0.03**	**0.46**	**0.51**	**0.97**	**0.54**	**1.79**
iv)	**CHHATISGARH**											
1	**Bastar**	10152.59	347.86	0.40	0.00	0.40	0.15	0.87	0.05	0.93	0.91	2.39
2	**Bilaspur**	8022.86	7190.01	580.70	0.00	580.70	36.19	301.77	24.18	325.95	5.88	948.73
3	**Dhamtari**	3915.57	3903.65	882.59	0.00	882.59	2.85	497.56	4.01	501.57	21.42	1408.44
4	**Durg**	8287.60	8256.76	556.53	0.00	556.53	14.36	500.85	6.64	507.48	26.01	1104.38
5	**Jashpur**	5583.19	3918.09	33.05	0.02	33.07	1.47	1.06	14.22	15.28	16.26	66.08
6	**Janjgir-Champa**	3723.65	3723.65	1953.73	0.00	1953.73	20.72	110.48	8.41	118.89	32.02	2125.36
7	**Kabirdham**	4061.73	3465.32	189.86	0.00	189.86	0.19	716.18	2.83	719.01	22.63	931.69
8	**Korba**	6333.50	6333.17	45.32	0.00	45.32	9.31	2.02	7.44	9.46	23.67	87.76
9	**Korea**	6383.21	2478.01	12.93	0.00	12.93	1.27	1.75	3.70	5.45	10.57	30.22
10	**Mahasamund**	4559.96	4559.96	407.22	0.00	407.22	66.05	537.89	8.43	546.32	56.55	1076.14
11	**Raigarh**	6819.11	6818.53	216.62	0.21	216.83	46.83	356.51	6.86	363.37	75.95	702.98
12	**Raipur**	11995.63	11995.63	1084.35	0.00	1084.35	35.21	304.08	5.18	309.26	19.51	1448.33
13	**Rajnandgaon**	7764.54	5467.60	380.68	0.00	380.68	15.89	418.36	9.29	427.65	14.31	838.53
14	**Surguja**	15125.37	2477.40	8.25	0.54	8.80	0.71	0.60	2.42	3.02	15.16	27.69
15	**Kanker**	6567.07	2278.90	20.84	0.00	20.84	8.88	79.05	1.08	80.13	0.00	109.85
	Sub Total	**109295.58**	**73214.54**	**6373.09**	**0.77**	**6373.87**	**260.07**	**3829.04**	**104.73**	**3933.77**	**340.85**	**10908.56**
v)	**MAHARASHTRA**											
1	**Gadchirol**	13966.06	298.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Gondiya**	5273.77	23.83	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**19239.83**	**322.39**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Grand Total	**265883.00**	**139681.52**	**11591.13**	**941.13**	**12532.26**	**379.19**	**4736.29**	**142.74**	**4879.03**	**342.00**	**18132.49**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
II	**Basin : Subernarekha & Bhurhabalang**											
i)	**JHARKHAND**											
1	**Bokaro**	2688.22	17.01	0.00	0.00	0.00	0.05	0.02	0.11	0.13	0.02	0.20
2	**Khunti**	2603.07	1297.28	3.34	0.00	3.34	23.15	16.40	23.63	40.03	30.02	96.54
3	**West Singhbhum**	6941.29	2687.33	1.92	0.00	1.92	1.93	0.00	2.33	2.33	1.78	7.97
4	**East Singhbum**	3433.65	3119.28	8.58	0.00	8.58	9.39	4.21	3.11	7.31	0.67	25.96
5	**Ramgarh**	1259.52	136.64	0.00	0.00	0.00	1.24	0.00	1.72	1.72	0.33	3.28
6	**Ranchi**	4743.84	2802.26	0.00	0.00	0.00	9.94	16.23	48.94	65.17	17.15	92.26
7	**Saraikela Kharsawan**	2546.17	2536.09	9.52	0.00	9.52	22.54	0.00	12.24	12.24	20.55	64.85
	Sub Total	**24215.76**	**12595.89**	**23.38**	**0.00**	**23.38**	**68.23**	**36.86**	**92.08**	**128.94**	**70.53**	**291.08**
ii)	**ODISHA**											
1	**Baleshwar**	3733.69	2644.77	121.24	0.00	121.24	0.00	546.62	0.21	546.83	0.00	668.07
2	**Mayurbhanj**	10035.64	7146.63	196.77	171.53	368.30	4.81	67.11	4.27	71.38	0.00	444.49
	Sub Total	**13769.33**	**9791.40**	**318.01**	**171.53**	**489.54**	**4.81**	**613.73**	**4.48**	**618.21**	**0.00**	**1112.56**
iii)	**WEST BENGAL**											
1	**Pashchim Medinipur**	9021.98	2387.68	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Purba Medinipur**	3893.57	85.26	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Puruliya**	6003.10	931.92	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**18918.65**	**3404.86**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**56903.74**	**25792.15**	**341.38**	**171.53**	**512.91**	**73.04**	**650.59**	**96.56**	**747.15**	**70.53**	**1403.63**
III	**Basin : Brahamani and Baitarni**											
i)	**JHARKHAND**											
1	**Gumla**	5149.51	4312.74	2.38	0.00	2.38	18.64	0.00	24.86	24.86	28.42	74.30
2	**Khunti**	2603.07	1305.80	3.37	0.00	3.37	23.30	16.51	23.79	40.30	30.21	97.18
3	**Latehar**	4092.97	11.85	0.01	0.00	0.01	0.07	0.09	0.09	0.18	0.06	0.31
4	**Lohardaga**	1439.38	911.85	4.26	0.00	4.26	15.27	4.96	22.48	27.44	28.30	75.28
5	**West Singhbhum**	6941.29	4253.95	3.05	0.00	3.05	3.06	0.00	3.69	3.69	2.83	12.62
6	**Ranchi**	4743.84	1150.39	0.00	0.00	0.00	4.08	6.66	20.09	26.76	7.04	37.88
7	**Simdega**	3639.71	3494.05	5.00	0.00	5.00	2.36	3.86	10.16	14.02	14.56	35.94
	Sub Total	**28609.77**	**15440.63**	**18.05**	**0.00**	**18.05**	**66.78**	**32.08**	**105.15**	**137.24**	**111.43**	**333.51**
ii)	**CHATTISGARH**											
1	**Jashpur**	5583.19	1205.37	10.17	0.01	10.18	0.45	0.33	4.37	4.70	5.00	20.33
2	**Surguja**	15125.37	158.79	0.53	0.03	0.56	0.05	0.04	0.16	0.19	0.97	1.77
	Sub Total	**20708.56**	**1364.16**	**10.697554**	**0.041331**	**10.738885**	**0.4966732**	**0.3645266**	**4.5291505**	**4.893677**	**5.9739525**	**22.10318735**
iii)	**ODISHA**											
1	**Anugul**	6129.61	4069.08	14.00	28.71	42.71	1.60	17.78	1.09	18.87	0.00	63.18
2	**Baleshwar**	3733.69	1081.10	49.56	0.00	49.56	0.00	223.44	0.08	223.53	0.00	273.09
3	**Bhadrak**	2390.28	2390.28	635.09	18.76	653.85	0.00	117.89	1.86	119.75	0.00	773.60
4	**Cuttack**	3802.97	119.34	17.05	4.01	21.05	0.24	1.84	0.01	1.85	0.00	23.15
5	**Deogarh**	2706.30	2434.72	25.23	8.47	33.69	4.53	3.30	0.22	3.53	0.00	41.75
6	**Dhenkanal**	4310.65	3650.47	116.92	29.50	146.41	9.73	41.05	1.11	42.16	0.00	198.30
7	**Jajapur**	2792.19	2750.48	165.63	8.54	174.17	0.10	78.98	2.23	81.21	0.00	255.48
8	**Kendrapara**	2388.95	1096.25	168.19	0.03	168.23	0.00	29.47	0.63	30.10	0.00	198.33
9	**Kendujhar**	7996.91	7996.91	160.85	66.56	227.41	77.13	50.83	1.86	52.69	0.00	357.23
10	**Mayurbhanj**	10035.64	2889.01	79.54	69.34	148.88	1.94	27.13	1.73	28.86	0.00	179.68
11	**Sambalpur**	6479.54	1212.69	35.85	8.35	44.20	2.16	8.82	0.14	8.96	0.00	55.33
12	**Sundargarh**	9353.52	5412.35	21.57	66.25	87.81	0.20	24.81	0.29	25.10	0.00	113.12
	Sub Total	**62120.25**	**35102.68**	**1489.47**	**308.51**	**1797.98**	**97.64**	**625.35**	**11.25**	**636.61**	**0.00**	**2532.23**
	Grand Total	**111438.58**	**51907.47**	**1518.22**	**308.55**	**1826.78**	**164.93**	**657.80**	**120.93**	**778.74**	**117.40**	**2887.84**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
IV	**Basin : Godavari**											
i)	**ANDHRA PRADESH**											
1	**East Godavari**	10571.11	5889.31	1785.53	0.00	1785.53	125.35	625.83	1.97	627.79	119.13	2657.79
2	**VISAKHAPATANAM**	11115.36	3614.27	174.47	0.00	174.47	105.96	89.96	29.58	119.54	80.31	480.27
3	**West Godavari**	7582.74	1682.39	672.60	0.00	672.60	33.64	649.19	1.08	650.27	35.46	1391.96
	Sub Total	**29269.21**	**11185.97**	**2632.59**	**0.00**	**2632.59**	**264.94**	**1364.98**	**32.62**	**1397.60**	**234.89**	**4530.03**
ii)	**TELANGANA**											
1	**Adilabad**	15526.99	15526.99	49.30	0.00	49.30	90.42	801.66	225.66	1027.32	32.70	1199.74
2	**Karimnagar**	11539.77	11530.94	1.22	0.00	1.22	68.61	688.94	2792.58	3481.52	10.70	3562.05
3	**Khammam**	15646.02	9996.76	130.17	0.00	130.17	258.87	440.61	296.10	736.71	69.69	1195.44
4	**Medak**	9489.96	9128.93	0.00	0.00	0.00	1.04	1588.45	55.68	1644.13	1.90	1647.06
5	**Nizamabad**	7674.38	7674.38	0.00	0.00	0.00	0.25	1980.28	2.21	1982.49	8.04	1990.78
6	RANGAREDDI	7358.88	505.32	0.00	0.00	0.00	0.33	42.59	0.83	43.42	1.65	45.40
7	**Warangal**	12447.42	6248.2	95.80	0.00	95.80	231.19	709.24	987.06	1696.30	39.46	2062.74
	Sub Total	**79683.42**	**60611.52**	**276.48**	**0.00**	**276.48**	**650.70**	**6251.78**	**4360.12**	**10611.89**	**164.14**	**11703.22**
iii)	**KARNATAKA**											
1	**Bidar**	5293.88	4469.12	0.00	0.00	0.00	0.00	213.42	165.10	378.52	3.41	381.93
2	**Gulbarga**	10687.27	0.18	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02
	Sub Total	**15981.15**	**4469.30**	**0.00**	**0.00**	**0.00**	**0.00**	**213.42**	**165.10**	**378.53**	**3.41**	**381.94**
iv)	**MADHYA PRADESH**											
1	**Balaghat**	8897.36	6686.72	734.86	0.00	734.86	105.21	19.51	358.39	377.90	78.08	1296.05
2	**Betul**	9690.38	2129.74	70.26	0.00	70.26	21.63	77.25	188.51	265.77	65.80	423.46
3	**Chhindwara**	11361.38	7972.16	107.39	0.00	107.39	58.87	385.98	908.11	1294.08	117.24	1577.58
4	**Mandla**	7201.48	709.24	21.23	0.00	21.23	3.64	0.00	16.05	16.05	7.37	48.29
5	**Seoni**	8422.7	6269.58	619.15	0.00	619.15	85.49	194.10	381.54	575.64	140.04	1420.32
	Sub Total	**45573.30**	**23767.44**	**1552.88**	**0.00**	**1552.88**	**274.84**	**676.84**	**1852.59**	**2529.44**	**408.54**	**4765.69**
v)	**CHHATISGARH**											
1	**Bastar**	10152.59	9804.73	11.27	0.00	11.27	4.37	24.63	1.48	26.10	25.60	67.34
2	**Bijapur**	8511.40	8511.40	0.00	0.00	0.00	30.07	0.35	0.69	1.04	1.33	32.44
3	**Dantewada**	8466.39	8466.39	0.00	0.00	0.00	0.89	1.32	0.04	1.36	0.98	3.23
4	**Dhamtari**	3915.57	11.93	2.70	0.00	2.70	0.01	1.52	0.01	1.53	0.07	4.30
5	**Durg**	8287.60	30.84	2.08	0.00	2.08	0.05	1.87	0.02	1.90	0.10	4.13
6	**Narayanpur**	4131.46	4131.46	0.10	0.00	0.10	0.00	0.66	0.05	0.71	0.58	1.39
7	**Rajnandgaon**	7764.54	2218.36	154.45	0.00	154.45	6.45	169.74	3.77	173.51	5.81	340.22
8	**Kanker**	6567.07	4288.17	39.21	0.00	39.21	16.72	148.74	2.03	150.77	0.00	206.70
	Sub Total	**57796.62**	**37463.28**	**209.81**	**0.00**	**209.81**	**58.55**	**348.83**	**8.09**	**356.93**	**34.46**	**659.75**

contd..

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
vi)	**MAHARASHTRA**											
1	**Ahmadnagar**	16510.41	10368.10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Akola**	5214.95	0.23	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Amravati**	11765.11	4020.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Aurangabad**	9772.28	8725.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Bhandara**	3719.41	3719.41	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Bid**	10244.73	8798.17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Buldana**	9409.67	3796.29	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Chandrapur**	10917.27	10917.27	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Gadchiroli**	13966.06	13667.51	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Gondiya**	5273.77	5249.95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Hingoli**	4514.84	4514.84	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Jalgaon**	11349.74	15.66	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Jalna**	7510.09	7386.59	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
14	**Latur**	7009.52	7007.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
15	**Nagpur**	9564.49	9564.49	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
16	**Nanded**	10260.74	10260.74	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
17	**Nashik**	15021.09	6973.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
18	**Osmanabad**	7347.20	2980.50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
19	**Parbhani**	6154.98	6154.98	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
20	**Pune**	15185.75	81.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
21	**Thane**	9208.22	3.10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
22	**Wardha**	6084.96	6084.96	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
23	**Washim**	5017.05	3960.73	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
24	**Yavatmal**	13069.20	13069.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**224091.53**	**147320.64**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
vii)	**ODISHA**											
1	**Kalahandi**	7633.06	417.57	33.73	4.82	38.55	2.34	1.28	0.22	1.51	0.00	42.40
2	**Koraput**	8180.27	6693.33	342.39	302.32	644.71	4.24	47.74	9.24	56.97	0.00	705.92
3	**Malkangiri**	5650.92	5650.92	44.96	14.79	59.75	0.30	13.41	0.51	13.92	0.00	73.97
4	NABARANGPUR	5236.39	3581.02	0.75	23.68	24.42	0.14	31.03	1.53	32.56	0.00	57.12
5	**Rayagada**	7126.04	871.13	7.65	27.54	35.19	4.62	4.31	0.03	4.34	0.00	44.15
	Sub Total	**33826.68**	**17213.97**	**429.47**	**373.15**	**802.62**	**11.64**	**97.77**	**11.53**	**109.30**	**0.00**	**923.56**
viii)	**PUDUCHERRY**											
1	**Yanam**	36.94	36.94	5.13	0.00	5.13	0.00	0.00	0.00	0.00	0.00	5.13
	Sub Total	**36.94**	**36.94**	**5.13**	**0.00**	**5.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.13**
	Grand Total	**486258.85**	**302069.06**	**5106.38**	**373.15**	**5479.53**	**1260.67**	**8953.63**	**6430.06**	**15383.69**	**845.44**	**22969.33**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

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				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
V	**Basin : Krishna**											
i)	**ANDHRA PRADESH**											
1	**Anantapur**	18987.72	4185.59	32.20	0.00	32.20	8.11	339.81	0.73	340.54	2.81	383.65
2	**Guntur**	11186.51	6545.38	886.92	0.00	886.92	12.32	931.30	51.15	982.45	85.39	1967.08
3	**Krishna**	8365.25	4686.80	947.93	0.00	947.93	91.58	589.98	40.91	630.88	51.25	1721.64
4	**Kurnool**	17503.31	9696.79	312.49	0.00	312.49	38.80	596.41	102.32	698.73	105.17	1155.18
5	**Prakasam**	17389.37	657.16	6.66	0.00	6.66	3.21	45.71	0.73	46.44	1.25	57.56
	Sub Total	**73432.16**	**25771.72**	**2186.19**	**0.00**	**2186.19**	**154.01**	**2503.21**	**195.83**	**2699.04**	**245.88**	**5285.12**
ii)	**TELANGANA**											
1	**Hyderabad**	173.43	173.43	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Karimnagar**	11539.77	8.83	0.00	0.00	0.00	0.05	0.53	2.14	2.67	0.01	2.73
3	**Khammam**	15646.02	4864.63	63.34	0.00	63.34	125.97	214.41	144.09	358.50	33.91	581.73
4	**Mahbubnagar**	17974.02	17974.02	114.15	0.00	114.15	18.85	2109.43	66.66	2176.09	123.29	2432.38
5	**Medak**	9489.96	361.03	0.00	0.00	0.00	0.04	62.82	2.20	65.02	0.07	65.14
6	**Nalgonda**	13742.14	13742.14	52.59	0.00	52.59	75.44	1976.05	535.10	2511.15	96.08	2735.26
7	RANGAREDDI	7358.88	6853.56	0.00	0.00	0.00	4.50	577.67	11.21	588.88	22.39	615.77
8	**Warangal**	12447.42	6199.23	95.04	0.00	95.04	229.37	703.69	979.32	1683.01	39.15	2046.58
	Sub Total	**88371.64**	**50176.87**	**325.13**	**0.00**	**325.13**	**454.23**	**5644.59**	**1740.73**	**7385.32**	**314.91**	**8479.58**
iii)	**KARNATAKA**											
1	**Bagalkot**	6432.04	6432.04	20.26	0.00	20.26	1.40	1292.68	62.77	1355.45	1161.32	2538.43
2	**Belgaum**	13120.75	12113.73	668.29	0.00	668.29	3.15	1577.46	1544.33	3121.78	999.39	4792.62
3	**Bellary**	8311.09	8311.09	1130.74	0.00	1130.74	27.28	930.54	40.48	971.02	479.72	2608.76
4	**Bidar**	5293.88	824.76	0.00	0.00	0.00	0.00	39.38	30.47	69.85	0.63	70.48
5	**Bijapur**	10261.00	10261.00	874.22	0.00	874.22	0.00	1295.33	806.95	2102.28	98.40	3074.90
6	**Chikmagalur**	7167.73	6264.50	66.77	0.00	66.77	58.33	308.31	1.51	309.82	127.87	562.79
7	**Chitradurga**	8360.22	8360.22	21.31	0.00	21.31	0.00	1053.11	0.00	1053.11	0.00	1074.42
8	DAKSHIN KANNAD	4578.68	1.09	0.00	0.00	0.00	0.00	0.04	0.10	0.14	0.05	0.19
9	DAVANGERE	5875.62	5875.62	963.30	0.00	963.30	15.34	989.88	8.60	998.48	124.37	2101.49
10	**Dharwad**	4202.26	2780.03	176.34	0.00	176.34	0.00	177.16	0.00	177.16	0.00	353.50
11	**Gadag**	4563.79	4563.79	327.33	0.00	327.33	1.84	474.44	3.73	478.17	142.71	950.05
12	**Gulbarga**	10687.27	10687.08	222.79	0.00	222.79	10.93	537.67	129.04	666.71	175.09	1075.51
13	**Hassan**	6789.18	1384.62	92.17	0.00	92.17	47.88	49.93	1.43	51.36	7.98	199.38
14	**Haveri**	4743.98	4623.62	50.04	0.00	50.04	94.52	806.85	0.19	807.04	233.84	1185.44
15	**Koppal**	5468.71	5468.71	419.30	0.00	419.30	0.40	925.16	0.00	925.16	2.50	1347.36
16	**Raichur**	8276.99	8276.99	1233.47	0.00	1233.47	7.89	284.21	192.88	477.09	207.32	1925.77
17	**Shimoga**	8361.30	5694.09	343.67	0.00	343.67	366.02	292.67	47.28	339.94	65.93	1115.56
18	**Tumkur**	10543.89	3897.56	15.15	0.00	15.15	33.26	603.34	3.33	606.67	0.00	655.09
19	**Udupi**	3841.79	3.06	0.00	0.00	0.00	0.00	0.01	0.20	0.21	0.05	0.27
20	UTTAR KANNAD	10048.65	664.06	0.00	0.00	0.00	3.99	6.10	7.02	13.12	10.16	27.26
21	**Yadgir**	5163.02	5163.02	992.40	0.00	992.40	29.74	233.23	111.19	344.42	28.28	1394.84
	Sub Total	**152091.84**	**111650.68**	**7617.55**	**0.00**	**7617.55**	**701.97**	**11877.49**	**2991.50**	**14868.99**	**3865.61**	**27054.11**
iv)	**MAHARASHTRA**											
1	**Ahmadnagar**	16510.41	6130.16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Bid**	10244.73	1446.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Kolhapur**	7500.31	7237.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Latur**	7009.52	2.45	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Osmanabad**	7347.20	4366.70	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Pune**	15185.75	14790.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Raigarh**	6942.67	2.53	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Ratnagiri**	8050.94	14.49	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Sangli**	8349.99	8346.19	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Satara**	10223.37	10187.31	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Sindhudurg**	4966.78	124.14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Solapur**	14495.87	14495.87	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Thane**	9208.22	2.55	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**126035.76**	**67146.95**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	Grand Total	**439931.40**	**254746.22**	**10128.86**	**0.00**	**10128.86**	**1310.21**	**20025.29**	**4928.05**	**24953.34**	**4426.39**	**40818.81**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Note : (1)Totals may not tally due to rounding off.

Note : (2) Data not availabe.

Note : (3)Estimated on the basis of the percentage of the area of each district, within the basin, to the district as a whole.

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
VI	**Basin : Cauvery**											
i)	**KARNATAKA**											
1	**Bengaluru Urban**	2175.82	987.82	0.00	0.00	0.00	0.95	50.14	0.00	50.14	0.00	51.09
2	**Bangalore Rural**	2294.62	978.92	0.00	0.00	0.00	0.00	101.10	0.00	101.10	0.15	101.25
3	**Chamarajanagar**	5688.19	5688.19	210.40	0.00	210.40	71.60	467.93	24.00	491.93	0.00	773.93
4	CHIKBALLAPUR	4188.56	6.40	0.00	0.00	0.00	0.00	0.89	0.00	0.89	0.00	0.89
5	**Chikmagalur**	7167.73	751.01	8.00	0.00	8.00	6.99	36.96	0.18	37.14	15.33	67.47
6	**Hassan**	6789.18	4941.78	328.95	0.00	328.95	170.88	178.20	5.09	183.29	28.48	711.59
7	**Kodagu**	4115.60	2898.68	8.63	0.00	8.63	0.63	0.75	0.00	0.75	0.94	10.95
8	**Mandya**	4942.61	4942.61	1032.40	0.00	1032.40	185.60	207.04	75.01	282.05	13.52	1513.57
9	**Mysore**	6319.07	6319.07	1015.67	0.00	1015.67	135.29	229.03	120.21	349.24	2.15	1502.35
10	**Ramanagara**	3511.62	3511.62	89.18	0.00	89.18	18.43	243.22	0.00	243.22	4.54	355.37
11	**Tumkur**	10543.89	3992.00	15.52	0.00	15.52	34.07	617.96	3.41	621.38	0.00	670.96
	Sub Total	**57736.89**	**35018.10**	**2708.76**	**0.00**	**2708.76**	**624.45**	**2133.23**	**227.90**	**2361.13**	**65.10**	**5759.44**
ii)	**KERALA**											
1	**Idukki**	5106.26	385.72	-	-	-	-	-	-	-	-	-
2	**Kannur**	2957.80	1.16	-	-	-	-	-	-	-	-	-
3	**Kozhikode**	2347.84	4.42	-	-	-	-	-	-	-	-	-
4	**Malappuram**	3599.11	1.90	-	-	-	-	-	-	-	-	-
5	**Palakkad**	4542.91	619.06	-	-	-	-	-	-	-	-	-
6	**Wayanad**	2141.18	1936.14	-	-	-	-	-	-	-	-	-
	Sub Total	**20695.10**	**2948.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
iii)	**TAMIL NADU**											
1	**Ariyalur**	1970.10	1623.55	65.71	0.00	65.71	23.92	219.60	49.42	269.03	0.00	358.65
2	**Coimbatore**	4708.71	2569.37	105.05	0.00	105.05	0.00	174.58	365.08	539.66	0.00	644.71
3	**Cuddalore**	3725.96	604.91	82.57	0.00	82.57	7.28	217.49	13.65	231.14	1.56	322.54
4	**Dharmapuri**	4529.54	1906.74	1.70	2.19	3.89	3.46	5.14	384.02	389.17	0.00	396.51
5	**Dindigul**	6164.99	4429.05	18.97	0.00	18.97	36.83	33.16	708.79	741.96	7.58	805.33
6	**Erode**	5802.54	5802.54	534.99	0.00	534.99	0.70	260.45	617.54	877.99	0.00	1413.68
7	**Karur**	2928.71	2928.71	137.59	2.44	140.03	0.00	107.47	279.78	387.25	0.00	527.28
8	**Krishnagiri**	5142.53	1909.10	3.63	0.00	3.63	30.43	65.61	153.89	219.50	0.00	253.56
9	**Nagapattinam**	2516.24	2516.20	1575.55	0.00	1575.55	0.00	0.00	0.00	0.00	6.92	1582.47
10	**Namakkal**	3434.37	3074.96	49.57	0.00	49.57	0.00	99.41	601.42	700.83	11.11	761.51
11	**Perambalur**	1768.81	625.19	0.00	0.00	0.00	11.87	9.37	142.06	151.43	0.00	163.31
12	**Pudukkottai**	4740.11	734.16	8.91	0.00	8.91	78.29	57.83	11.39	69.22	0.00	156.41
13	**Salem**	5247.41	3027.08	10.21	0.00	10.21	0.00	135.89	590.88	726.78	0.00	736.99
14	**Thanjavur**	3438.78	2221.95	1184.40	0.00	1184.40	0.19	362.98	1.01	363.99	0.00	1548.58
15	**The Nilgiris**	2572.79	2213.40	0.00	0.00	0.00	0.00	0.00	11.61	11.61	0.00	11.61
16	**Thiruvarur**	2302.70	2300.40	2185.74	0.00	2185.74	0.00	0.00	0.00	0.00	0.00	2185.74
17	**Tiruchirappalli**	4564.08	4032.11	342.08	0.00	342.08	27.32	97.28	361.75	459.04	0.00	828.43
18	**Tiruppur**	5266.55	4983.33	265.60	2.01	267.61	19.73	150.76	717.05	867.81	0.00	1155.15
	Sub Total	**70824.92**	**47502.75**	**6572.28**	**6.63**	**6578.92**	**240.00**	**1997.05**	**5009.34**	**7006.39**	**27.17**	**13852.48**
iv)	**PONDICHERY**											
1	**Karaikal**	154.98	154.98	39.11	0.00	39.11	0.00	6.52	0.00	6.52	0.14	45.77
	Sub Total	**154.98**	**154.98**	**39.11**	**0.00**	**39.11**	**0.00**	**6.52**	**0.00**	**6.52**	**0.14**	**45.77**
	Grand Total	**149411.89**	**85624.23**	**9320.15**	**6.63**	**9326.79**	**864.45**	**4136.80**	**5237.24**	**9374.04**	**92.41**	**19657.69**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
VII	**Basin : Penner**											
i)	**ANDHRA PRADESH**											
1	**Anantapur**	18987.72	14802.13	113.86	0.00	113.86	28.66	1201.72	2.58	1204.30	9.93	1356.76
2	**Chittoor**	14957.01	4929.17	10.65	0.00	10.65	134.25	513.24	68.10	581.34	0.27	726.51
3	**Kurnool**	17503.31	7747.18	249.66	0.00	249.66	31.00	476.50	81.75	558.24	84.03	922.93
4	**Prakasam**	17389.37	945.21	9.58	0.00	9.58	4.61	65.74	1.05	66.79	1.80	82.79
5	**SPSR Nellore**	13090.71	4151.44	455.89	0.00	455.89	257.95	324.94	21.66	346.60	19.26	1079.70
6	**YSR Kadapa**	14969.72	14877.73	9.18	0.00	9.18	91.73	1400.67	26.71	1427.38	13.35	1541.65
	Sub Total	**96897.84**	**47452.86**	**848.84**	**0.00**	**848.84**	**548.21**	**3982.82**	**201.84**	**4184.66**	**128.63**	**5710.34**
ii)	**KARNATAKA**											
1	**Bangalore Rural**	2294.62	380.08	0.00	0.00	0.00	0.00	39.25	0.00	39.25	0.06	39.31
2	CHIKBALLAPUR	4188.56	3367.63	0.00	0.00	0.00	0.00	469.95	0.00	469.95	0.00	469.95
3	**Kolar**	3968.44	388.52	0.00	0.00	0.00	0.00	24.50	0.00	24.50	0.00	24.50
4	**Tumkur**	10543.89	2654.33	10.32	0.00	10.32	22.65	410.89	2.27	413.16	0.00	446.13
	Sub Total	**20995.51**	**6790.56**	**10.32**	**0.00**	**10.32**	**22.65**	**944.59**	**2.27**	**946.86**	**0.06**	**979.89**
	Grand Total	**117893.35**	**54243.42**	**859.16**	**0.00**	**859.16**	**570.86**	**4927.41**	**204.11**	**5131.52**	**128.69**	**6690.23**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
VIII	**Basin : East Flowing Rivers from Mahanadi to Pennar**											
i)	**ANDHRA PRADESH**											
1	**East Godavari**	10571.11	4681.80	1419.43	0.00	1419.43	99.64	497.51	1.56	499.08	94.70	2112.86
2	**Guntur**	11186.51	4641.13	628.88	0.00	628.88	8.74	660.36	36.27	696.63	60.55	1394.80
3	**Krishna**	8365.25	3678.45	743.98	0.00	743.98	71.88	463.04	32.10	495.15	40.23	1351.24
4	**Kurnool**	17503.31	59.34	1.91	0.00	1.91	0.24	3.65	0.63	4.28	0.64	7.07
5	**Prakasam**	17389.37	15786.99	160.04	0.00	160.04	77.00	1098.07	17.52	1115.59	30.12	1382.75
6	**SPSR Nellore**	13090.71	2848.33	312.79	0.00	312.79	176.98	222.95	14.86	237.80	13.21	740.79
7	**Srikakulam**	5730.80	5730.80	1161.48	0.00	1161.48	591.37	135.84	172.67	308.51	56.36	2117.72
8	VISAKHAPATANAM	11115.36	7501.09	362.10	0.00	362.10	219.90	186.71	61.38	248.09	166.67	996.77
9	**Vizianagaram**	5821.45	5821.45	424.40	0.00	424.40	879.03	441.33	115.34	556.67	23.39	1883.49
10	**West Godavari**	7582.74	5900.34	2358.87	0.00	2358.87	117.97	2276.79	3.78	2280.58	124.35	4881.77
	Sub Total	**108356.61**	**56649.72**	**7573.89**	**0.00**	**7573.89**	**2242.76**	**5986.25**	**456.12**	**6442.37**	**610.23**	**16869.25**
ii)	**TELANGANA**											
1	**Khammam**	15646.02	784.64	10.22	0.00	10.22	20.32	34.58	23.24	57.82	5.47	93.83
	Sub Total	**15646.02**	**784.64**	**10.22**	**0.00**	**10.22**	**20.32**	**34.58**	**23.24**	**57.82**	**5.47**	**93.83**
iii)	**ODISHA**											
1	**Gajapati**	3928.20	3928.20	0.00	251.45	251.45	18.79	20.95	1.02	21.97	0.00	292.21
2	**Ganjam**	8197.71	7698.21	909.02	471.04	1380.05	257.61	50.58	6.11	56.69	0.00	1694.35
3	**Kalahandi**	7633.06	645.40	52.14	7.45	59.59	3.62	1.98	0.34	2.33	0.00	65.53
4	**Kandhamal**	7770.03	1962.90	0.76	1.56	2.32	0.02	1.12	0.09	1.22	0.00	3.55
5	**Khordha**	2654.72	192.40	17.65	0.71	18.36	0.53	1.49	0.09	1.57	0.00	20.47
6	**Koraput**	8180.27	1486.94	76.06	67.16	143.22	0.94	10.60	2.05	12.66	0.00	156.82
7	**Nayagarh**	3755.00	296.34	1.86	2.41	4.28	0.06	0.85	0.07	0.92	0.00	5.26
8	**Rayagada**	7126.04	6150.44	54.00	194.46	248.46	32.62	30.45	0.20	30.65	0.00	311.73
	Sub Total	**49245.03**	**22360.83**	**1111.49**	**996.24**	**2107.73**	**314.19**	**118.03**	**9.98**	**128.00**	**0.00**	**2549.92**
	Grand Total	**173247.66**	**79795.19**	**8695.60**	**996.24**	**9691.83**	**2577.27**	**6138.86**	**489.34**	**6628.19**	**615.70**	**19513.00**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
IX	**Basin : East Flowing Rivers from Pennar to Kanyakumari**											
i)	**ANDHRA PRADESH**											
1	**Chittoor**	14957.01	10027.85	21.68	0.00	21.68	273.13	1044.13	138.53	1182.66	0.54	1478.01
2	**SPSR Nellore**	13090.71	6090.94	668.88	0.00	668.88	378.46	476.75	31.77	508.53	28.25	1584.13
3	**YSR Cudappah**	14969.72	92.00	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**43017.44**	**16210.79**	**690.56**	**0.00**	**690.56**	**651.59**	**1520.88**	**170.31**	**1691.19**	**28.80**	**3062.14**
ii)	**KARNATAKA**											
1	**Bengaluru Urban**	2175.82	1188.00	0.00	0.00	0.00	1.15	60.30	0.00	60.30	0.00	61.45
2	**Bangalore Rural**	2294.62	935.62	0.00	0.00	0.00	0.00	96.63	0.00	96.63	0.14	96.77
3	CHIKBALLAPUR	4188.56	814.53	0.00	0.00	0.00	0.00	113.67	0.00	113.67	0.00	113.67
4	**Kolar**	3968.44	3579.91	0.00	0.00	0.00	0.00	225.72	0.00	225.72	0.00	225.72
	Sub Total	**12627.44**	**6518.06**	**0.00**	**0.00**	**0.00**	**1.15**	**496.32**	**0.00**	**496.32**	**0.14**	**497.61**
iii)	**KERALA**											
1	**Idukki**	5106.26	38.13	-	-	-	-	-	-	-	-	-
2	**Kollam**	2556.16	11.68	-	-	-	-	-	-	-	-	-
3	**Pathanamthitta**	2709.55	4.92	-	-	-	-	-	-	-	-	-
4	**Thiruvananthapuram**	2246.81	4.33	-	-	-	-	-	-	-	-	-
	Sub Total	**12618.78**	**59.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
iv)	**TAMIL NADU**											
1	**Ariyalur**	1970.10	346.55	14.03	0.00	14.03	5.10	46.88	10.55	57.42	0.00	76.56
2	**Chennai**	128.00	128.00	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Cuddalore**	3725.96	3121.05	426.01	0.00	426.01	37.56	1122.15	70.41	1192.56	8.04	1664.18
4	**Dharmapuri**	4529.54	2622.80	2.33	3.01	5.34	4.75	7.08	528.24	535.31	0.00	545.41
5	**Dindigul**	6164.99	1735.94	7.43	0.00	7.43	14.43	13.00	277.81	290.80	2.97	315.64
6	**Kanchipuram**	4475.20	4475.19	5.30	0.00	5.30	714.50	121.14	382.36	503.50	0.00	1223.30
7	**Kanniyakumari**	1746.80	70.81	4.30	0.00	4.30	6.25	1.92	1.57	3.49	0.00	14.04
8	**Krishnagiri**	5142.53	3233.43	6.16	0.00	6.16	51.53	111.12	260.64	371.76	0.00	429.45
9	**Madurai**	3767.70	3767.63	249.89	0.00	249.89	195.86	11.41	459.53	470.94	0.00	916.68
10	**Namakkal**	3434.37	359.41	5.79	0.00	5.79	0.00	11.62	70.30	81.92	1.30	89.01
11	**Perambalur**	1768.81	1143.62	0.00	0.00	0.00	21.72	17.15	259.86	277.01	0.00	298.72
12	**Pudukkottai**	4740.11	4005.95	48.62	0.00	48.62	427.16	315.55	62.13	377.68	0.00	853.47
13	**Ramanathapuram**	4040.52	4040.51	0.00	0.00	0.00	507.89	11.38	116.64	128.02	0.00	635.91
14	**Salem**	5247.41	2220.33	7.49	0.00	7.49	0.00	99.68	433.41	533.08	0.00	540.57
15	**Sivaganga**	4325.62	4325.62	0.00	0.00	0.00	637.92	29.12	109.50	138.62	0.00	776.54
16	**Thanjavur**	3438.78	1216.83	648.63	0.00	648.63	0.11	198.78	0.55	199.33	0.00	848.07
17	**Theni**	2909.55	2907.60	150.70	0.00	150.70	12.91	116.07	484.03	600.10	0.00	763.71
18	**Thiruvallur**	3377.77	3377.77	0.00	0.00	0.00	246.94	1086.80	102.25	1189.05	0.00	1435.99
19	**Thoothukkudi**	4763.91	4763.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
20	**Tiruchirappalli**	4564.08	531.97	45.13	0.00	45.13	3.60	12.84	47.73	60.56	0.00	109.30
21	**Tirunelveli**	6998.99	6982.02	273.27	0.00	273.27	554.10	12.40	698.96	711.36	0.00	1538.73
22	**Tiruvannamalai**	6187.67	6187.67	1.80	0.00	1.80	284.89	48.59	1884.41	1933.00	0.00	2219.69
23	**Vellore**	6056.53	6056.53	0.00	0.00	0.00	23.58	199.36	854.04	1053.40	0.00	1076.98
24	**Viluppuram**	7211.86	7211.85	13.05	0.00	13.05	428.15	645.35	2475.88	3121.23	0.00	3562
25	**Virudhunagar**	4487.16	4487.15	0.00	0.00	0.00	276.79	3.00	327.84	330.84	0.00	607.63
	Sub Total	**105203.96**	**79320.14**	**1909.93**	**3.01**	**1912.94**	**4455.75**	**4242.37**	**9918.63**	**14161.00**	**12.31**	**20542.00**
v)	**PUDUCHERY**											
1	PONDICHERRY	301.19	301.19	0.00	0.00	0.00	0.00	159.61	0.00	159.61	0.00	159.61
	Sub Total	**301.19**	**301.19**	**0.00**	**0.00**	**0.00**	**0.00**	**159.61**	**0.00**	**159.61**	**0.00**	**159.61**
	Grand Total	**173768.81**	**102409.24**	**2600.49**	**3.01**	**2603.50**	**5108.49**	**6419.18**	**10088.93**	**16508.12**	**41.25**	**24261.35**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
X	**Basin : Narmada**											
i)	**GUJARAT**											
1	**Bharuch**	5083.67	1849.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Dohad**	3458.35	60.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Narmada**	2719.36	2321.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Panch Mahals**	5095.62	137.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Surat**	4174.64	168.82	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Vadodara**	7234.95	3788.50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**27766.59**	**8326.35**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**											
1	**Alirajpur**	3217.78	3001.03	24.57	0.00	24.57	37.24	8.44	171.69	180.13	94.40	336.34
2	**Anuppur**	3637.40	517.37	0.42	0.00	0.42	0.04	1.94	1.79	3.73	1.84	6.03
3	**Balaghat**	8897.36	2210.54	242.93	0.00	242.93	34.78	6.45	118.48	124.93	25.81	428.46
4	**Barwani**	5234.28	3841.08	41.30	0.00	41.30	12.97	214.66	449.74	664.40	227.77	946.44
5	**Betul**	9690.38	3712.61	122.48	0.00	122.48	37.71	134.67	328.62	463.29	114.71	738.19
6	**Bhopal**	2618.98	3.33	0.12	0.00	0.12	0.05	0.48	0.43	0.91	0.25	1.33
7	**Burhanpur**	3084.12	368.60	0.00	0.00	0.00	1.27	33.34	34.54	67.88	4.25	73.40
8	**Chhindwara**	11361.38	3389.22	45.65	0.00	45.65	25.03	164.09	386.06	550.16	49.84	670.68
9	**Damoh**	7068.37	417.79	13.98	0.00	13.98	5.80	24.04	26.03	50.07	12.57	82.41
10	**Dewas**	6700.19	3740.87	25.87	0.00	25.87	76.58	873.89	652.53	1526.43	112.33	1741.21
11	**Dhar**	7842.30	4756.36	254.00	0.00	254.00	170.29	1002.28	683.74	1686.02	332.48	2442.78
12	**Dindori**	5543.20	4598.04	10.11	0.00	10.11	0.34	0.46	5.39	5.86	13.75	30.06
13	**East Nimar (Khandwa)**	7169.74	6469.19	264.57	0.00	264.57	52.80	309.96	977.51	1287.48	212.36	1817.21
14	**Harda**	3192.55	3127.44	965.52	0.00	965.52	0.00	231.44	320.88	552.32	253.08	1770.92
15	**Hoshangabad**	6456.42	6456.42	1753.44	0.00	1753.44	25.19	1568.65	967.66	2536.31	189.66	4504.60
16	**Indore**	3765.95	1013.68	6.37	0.00	6.37	10.87	505.88	32.75	538.63	25.04	580.92
17	**Jabalpur**	4911.29	4619.32	198.09	0.00	198.09	8.90	1331.29	395.62	1726.92	194.83	2128.73
18	**Jhabua**	3302.18	7.92	0.38	0.00	0.38	0.28	0.06	0.34	0.41	0.34	1.40
19	**Katni**	4867.17	1093.93	31.47	0.00	31.47	3.13	78.84	121.29	200.14	117.06	351.80
20	**Mandla**	7201.48	6371.63	190.71	0.00	190.71	32.66	0.00	144.17	144.17	66.24	433.78
21	**Narsinghpur**	4947.28	4818.19	86.48	0.00	86.48	0.06	2426.53	360.93	2787.46	187.48	3061.48
22	**Raisen**	8172.10	4494.04	579.60	0.00	579.60	24.16	1105.32	231.91	1337.23	270.04	2211.02
23	**Sagar**	9858.18	371.79	5.04	0.00	5.04	3.84	27.36	62.48	89.84	28.95	127.66
24	**Sehore**	6317.41	3143.66	417.64	0.00	417.64	121.86	547.60	563.22	1110.83	211.90	1862.22
25	**Seoni**	8422.70	2153.12	212.63	0.00	212.63	29.36	66.66	131.03	197.69	48.09	487.77
26	**Umaria**	4411.61	0.47	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.04
27	**West Nimar (Khargone)**	7757.16	7397.29	738.33	0.00	738.33	24.54	709.31	1559.72	2269.03	648.08	3679.98
	Sub Total	**165648.96**	**82094.93**	**6231.70**	**0.00**	**6231.70**	**739.74**	**11373.69**	**8728.57**	**20102.26**	**3443.16**	**30516.88**
iii)	**CHHATISGARH**											
1	**Bilaspur**	8022.86	0.71	0.06	0.00	0.06	0.00	0.03	0.00	0.03	0.00	0.09
2	**Kabirdham**	4061.73	596.41	32.68	0.00	32.68	0.03	123.26	0.49	123.75	3.89	160.35
3	**Rajnandgaon**	7764.54	78.58	5.47	0.00	5.47	0.23	6.01	0.13	6.15	0.21	12.05
	Sub Total	**19849.13**	**675.70**	**38.21**	**0.00**	**38.21**	**0.26**	**129.30**	**0.62**	**129.93**	**4.10**	**172.50**
iv)	**MAHARASHTRA**											
1	**Dhule**	6925.51	7.95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Nandurbar**	5684.20	1572.12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**12609.71**	**1580.07**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**225874.39**	**92677.05**	**6269.91**	**0.00**	**6269.91**	**740.01**	**11502.99**	**8729.20**	**20232.19**	**3447.27**	**30689.38**

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Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XI	**Basin : Tapi**											
i)	**GUJARAT**											
1	**Narmada**	2719.36	398.16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Bharuch**	5083.67	1034.35	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Surat**	4174.64	2654.37	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Tapi**	3040.24	1686.10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**The Dangs**	1700.82	25.75	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**16718.73**	**5798.73**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**											
1	**Harda**	3192.55	65.11	20.10	0.00	20.10	0.00	4.82	6.68	11.50	5.27	36.87
2	**Burhanpur**	3084.12	2715.52	0.00	0.00	0.00	9.36	245.64	254.48	500.12	31.30	540.78
3	**Betul**	9690.38	3848.03	126.95	0.00	126.95	39.08	139.58	340.60	480.19	118.89	765.11
4	**East Nimar (Khandwa)**	7169.74	700.55	28.65	0.00	28.65	5.72	33.57	105.86	139.42	23.00	196.79
5	**West Nimar (Khargone)**	7757.16	359.87	35.92	0.00	35.92	1.19	34.51	75.88	110.39	31.53	179.03
6	**Barwani**	5234.28	1393.21	14.98	0.00	14.98	4.71	77.86	163.13	240.99	82.61	343.29
	Sub Total	**36128.23**	**9082.29**	**226.60**	**0.00**	**226.60**	**60.06**	**535.97**	**946.62**	**1482.59**	**292.60**	**2061.86**
iii)	**MAHARASHTRA**											
1	**Washim**	5017.05	1056.31	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Nashik**	15021.09	5959.21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Nandurbar**	5684.20	4111.38	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Jalna**	7510.09	123.51	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Jalgaon**	11349.74	11334.09	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Dhule**	6925.51	6864.04	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Buldana**	9409.67	5613.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Aurangabad**	9772.28	1046.84	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Akola**	5214.95	5214.73	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Amravati**	11765.11	7744.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**87669.69**	**49067.70**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**140516.65**	**63948.72**	**226.60**	**0.00**	**226.60**	**60.06**	**535.97**	**946.62**	**1482.59**	**292.60**	**2061.86**

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				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XII	**Basin : West Flowing Rivers from Tapi to Tadri**											
i)	**DADRA & NAGAR HAVELI**											
1	**Dadra and Nagar Haveli**	477.07	477.07	20.89	0.00	20.89	0.00	2.28	19.44	21.72	35.09	77.70
	Sub Total	**477.07**	**477.07**	**20.89**	**0.00**	**20.89**	**0.00**	**2.28**	**19.44**	**21.72**	**35.09**	**77.70**
ii)	**DAMAN & DIU**											
1	**Daman**	70.98	70.98	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**70.98**	**70.98**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
iii)	**GOA**											
1	**North Goa**	1650.18	1650.18	41.64	0.00	41.64	97.10	22.80	10.46	33.26	8.80	180.80
2	**South Goa**	1917.11	1917.11	44.90	0.00	44.90	107.25	26.46	15.94	42.40	10.65	205.20
	Sub Total	**3567.29**	**3567.29**	**86.54**	**0.00**	**86.54**	**204.35**	**49.26**	**26.40**	**75.66**	**19.45**	**386.00**
iv)	**GUJARAT**											
1	**Navsari**	2146.71	2146.71	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Surat**	4174.64	1351.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Tapi**	3040.24	1354.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**The Dangs**	1700.82	1675.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Valsad**	2894.91	2894.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**13957.32**	**9422.26**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
v)	**KARNATAKA**											
1	**Belgaum**	13120.75	1007.02	55.56	0.00	55.56	0.26	131.13	128.38	259.52	83.08	398.41
2	**Dharwad**	4202.26	1422.24	90.21	0.00	90.21	0.00	90.63	0.00	90.63	0.00	180.85
3	**Haveri**	4743.98	120.36	1.30	0.00	1.30	2.46	21.00	0.01	21.01	6.09	30.86
4	**Shimoga**	8361.30	15.01	0.91	0.00	0.91	0.96	0.77	0.12	0.90	0.17	2.94
5	UTTAR KANNAD	10048.65	8350.89	0.00	0.00	0.00	50.13	76.71	88.22	164.93	127.71	342.76
	Sub Total	**40476.94**	**10915.52**	**147.98**	**0.00**	**147.98**	**53.82**	**320.25**	**216.73**	**536.98**	**217.05**	**955.82**
vi)	**MAHARASHTRA**											
1	**Ahmadnagar**	16510.41	12.14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Dhule**	6925.51	53.52	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Kolhapur**	7500.31	262.87	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Mumbai**	144.60	144.60	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Mumbai (Suburban)**	438.28	438.28	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Nandurbar**	5684.20	0.69	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Nashik**	15021.09	2088.62	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Pune**	15185.75	313.94	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Raigarh**	6942.67	6940.14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Ratnagiri**	8050.94	8036.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Sangli**	8349.99	3.80	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Satara**	10223.37	36.06	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Sindhudurg**	4966.78	4842.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
14	**Thane**	9208.22	9202.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**115152.12**	**32375.79**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**173701.72**	**56828.91**	**255.41**	**0.00**	**255.41**	**258.17**	**371.79**	**262.57**	**634.36**	**271.59**	**1419.52**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XIII	**Basin : West Flowing Rivers from Tadri to Kanyakumari**											
i)	**KARNATAKA**											
1	**Chikmagalur**	7167.73	152.22	1.62	0.00	1.62	1.42	7.49	0.04	7.53	3.11	13.68
2	**Dakshin Kannad**	4578.68	4577.59	0.00	0.00	0.00	0.00	172.55	427.48	600.03	209.87	809.90
3	**Hassan**	6789.18	462.78	30.80	0.00	30.80	16.00	16.69	0.48	17.16	2.67	66.64
4	**Kodagu**	4115.60	1216.92	3.63	0.00	3.63	0.27	0.31	0.00	0.31	0.39	4.60
5	**Shimoga**	8361.30	2652.20	160.07	0.00	160.07	170.49	136.32	22.02	158.34	30.71	519.61
6	**Udupi**	3841.79	3838.73	0.00	0.00	0.00	4.53	6.98	255.72	262.70	67.98	335.20
7	UTTAR KANNAD	10048.65	1033.70	0.00	0.00	0.00	6.21	9.49	10.92	20.42	15.81	42.43
	Sub Total	**44902.93**	**13934.14**	**196.13**	**0.00**	**196.13**	**198.90**	**349.84**	**716.65**	**1066.49**	**330.53**	**1792.05**
ii)	**KERALA**											
1	**Alappuzha**	1454.48	1454.48	-	-	-	-	-	-	-	-	-
2	**Ernakulam**	2454.58	2454.57	-	-	-	-	-	-	-	-	-
3	**Idukki**	5106.26	4682.42	-	-	-	-	-	-	-	-	-
4	**Kannur**	2957.80	2956.64	-	-	-	-	-	-	-	-	-
5	**Kasaragod**	1964.67	1964.67	-	-	-	-	-	-	-	-	-
6	**Kollam**	2556.16	2544.48	-	-	-	-	-	-	-	-	-
7	**Kottayam**	2258.83	2258.83	-	-	-	-	-	-	-	-	-
8	**Kozhikode**	2347.84	2343.42	-	-	-	-	-	-	-	-	-
9	**Malappuram**	3599.11	3597.21	-	-	-	-	-	-	-	-	-
10	**Palakkad**	4542.91	3923.85	-	-	-	-	-	-	-	-	-
11	**Pathanamthitta**	2709.55	2704.62	-	-	-	-	-	-	-	-	-
12	**Thiruvananthapuram**	2246.81	2242.48	-	-	-	-	-	-	-	-	-
13	**Thrissur**	3071.57	3071.56	-	-	-	-	-	-	-	-	-
14	**Wayanad**	2141.18	205.04	-	-	-	-	-	-	-	-	-
	Sub Total	**39411.75**	**36404.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
iii)	**TAMIL NADU**											
1	**Coimbatore**	4708.71	2139.34	87.47	0.00	87.47	0.00	145.37	303.97	449.34	0.00	536.81
2	**Kanniyakumari**	1746.80	1675.98	101.88	0.00	101.88	147.86	45.45	37.08	82.53	0.00	332.28
3	**The Nilgiris**	2572.79	359.39	0.00	0.00	0.00	0.00	0.00	1.89	1.89	0.00	1.89
4	**Theni**	2909.55	1.95	0.10	0.00	0.10	0.01	0.08	0.32	0.40	0.00	0.51
5	**Tirunelveli**	6998.99	16.96	0.66	0.00	0.66	1.35	0.03	1.70	1.73	0.00	3.74
6	**Tiruppur**	5266.55	283.22	15.10	0.11	15.21	1.12	8.57	40.75	49.32	0.00	65.65
7	**Virudhunagar**	4487.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub Total	**28690.55**	**4476.84**	**205.21**	**0.11**	**205.33**	**150.34**	**199.49**	**385.72**	**585.21**	**0.00**	**940.87**
iv)	**PONDICHERY**											
1	**Mahe**	9.90	9.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30
	Sub Total	**9.90**	**9.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.30**	**0.30**
	Grand Total	**113015.13**	**54825.15**	**401.34**	**0.11**	**401.45**	**349.24**	**549.33**	**1102.37**	**1651.70**	**330.83**	**2733.22**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XIV	**Basin : Mahi**											
i)	**GUJARAT**											
1	**Anand**	2806.43	996.53	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Bharuch**	5083.67	2199.42	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Dohad**	3458.35	3397.99	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Kheda**	3843.53	518.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Panch Mahals**	5095.62	4889.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Sabar Kantha**	7140.29	26.43	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Vadodara**	7234.95	3446.45	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**34662.84**	**15474.34**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**											
1	**Alirajpur**	3217.78	216.75	1.77	0.00	1.77	2.69	0.61	12.40	13.01	6.82	24.29
2	**Dhar**	7842.30	1505.16	80.38	0.00	80.38	53.89	317.17	216.37	533.54	105.21	773.02
3	**Jhabua**	3302.18	3294.25	158.10	0.00	158.10	117.36	25.65	143.18	168.82	139.53	583.81
4	**Neemuch**	4001.43	29.18	0.56	0.00	0.56	0.13	2.19	5.89	8.09	0.23	9.01
5	**Ratlam**	4639.98	1820.86	23.72	0.00	23.72	15.91	330.11	333.05	663.16	87.64	790.42
	Sub Total	**23003.67**	**6866.20**	**264.53**	**0.00**	**264.53**	**189.98**	**675.74**	**710.89**	**1386.63**	**339.44**	**2180.56**
iii)	**RAJASTHAN**											
1	**Banswara**	4332.72	4332.72	639.74	0.00	639.74	44.03	37.12	157.41	194.53	205.47	1083.77
2	CHITTORGARH	7500.49	133.03	1.92	0.00	1.92	0.11	23.26	20.64	43.91	0.37	46.30
3	**Dungarpur**	3640.43	3042.56	66.54	0.00	66.54	20.02	51.37	231.34	282.71	20.01	389.27
4	**Pratapgarh**	4141.45	2993.52	75.03	0.00	75.03	2.65	175.98	538.31	714.30	44.03	836.01
5	**Udaipur**	11459.12	5494.69	19.44	0.00	19.44	53.69	66.91	348.09	415.01	1.98	490.12
	Sub Total	**31074.21**	**15996.52**	**802.66**	**0.00**	**802.66**	**120.50**	**354.65**	**1295.80**	**1650.45**	**271.86**	**2845.47**
	Grand Total	**88740.72**	**38337.06**	**1067.19**	**0.00**	**1067.19**	**310.48**	**1030.39**	**2006.68**	**3037.07**	**611.30**	**5026.04**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 15 : Gross Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XV	**Basin: Sabarmati**											
i)	**GUJARAT**											
1	**Ahmedabad**	7712.66	4718.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Anand**	2806.43	1785.66	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Banaskantha**	10247.55	506.28	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Bhavnagar**	8062.74	213.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Gandhinagar**	2055.07	2055.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Kheda**	3843.53	3325.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Mahesana**	4244.35	2087.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Panchmahal**	5095.62	68.67	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Rajkot**	10762.12	261.22	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Sabarkantha**	7140.29	7113.86	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Surendranagar**	10116.24	4603.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**72086.60**	**26738.20**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**RAJASTHAN**											
1	**Dungarpur**	3640.43	597.87	13.07	0.00	13.07	3.93	10.09	45.46	55.55	3.93	76.49
2	**Sirohi**	4961.34	54.66	0.58	0.00	0.58	0.33	1.11	12.17	13.28	0.00	14.19
3	**Udaipur**	11459.12	3289.85	11.64	0.00	11.64	32.15	40.06	208.41	248.48	1.18	293.45
	Sub Total	**20060.89**	**3942.38**	**25.30**	**0.00**	**25.30**	**36.41**	**51.26**	**266.05**	**317.31**	**5.11**	**384.13**
	Grant Total	**92147.49**	**30680.58**	**25.30**	**0.00**	**25.30**	**36.41**	**51.26**	**266.05**	**317.31**	**5.11**	**384.13**

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				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XVI	**Basin : WFR of Kutch, Saurashtra Including Luni**											
i)	**GUJARAT**											
1	**Ahmadabad**	7712.66	2994.60	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Amreli**	7100.01	7100.01	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Anand**	2806.43	24.24	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Banas Kantha**	10247.55	9741.27	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Bhavnagar**	8062.74	7849.49	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Jamnagar**	10490.91	10490.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Junagadh**	8497.29	8497.29	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Kachchh**	40508.20	40508.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Mahesana**	4244.35	2156.99	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Patan**	5431.61	5431.61	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Porbandar**	2203.38	2203.38	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Rajkot**	10762.12	10500.90	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Surendranagar**	10116.24	5512.88	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**128183.49**	**113011.77**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**RAJASTHAN**											
1	**Ajmer**	8206.23	1870.76	9.22	0.00	9.22	13.84	19.99	260.39	280.38	30.15	333.59
2	**Barmer**	27351.28	20773.88	205.30	0.00	205.30	0.00	848.72	1641.38	2490.10	0.83	2696.22
3	**Bhilwara**	10052.59	2.23	0.02	0.00	0.02	0.01	0.06	0.42	0.47	0.00	0.51
4	**Chittorgarh**	7500.49	36.42	0.52	0.00	0.52	0.03	6.37	5.65	12.02	0.10	12.68
5	**Jaisalmer**	37070.06	2021.38	114.99	0.00	114.99	0.00	70.74	0.89	71.63	0.01	186.63
6	JALORE	10322.33	10322.33	970.33	0.00	970.33	0.00	1913.25	1106.13	3019.38	0.00	3989.71
7	**Jodhpur**	22037.60	13324.02	9.26	0.00	9.26	0.00	4369.32	21.38	4390.71	7.53	4407.50
8	**Nagaur**	17026.59	6096.23	0.00	0.00	0.00	0.00	1035.19	303.69	1338.89	0.23	1339.11
9	**Pali**	11890.23	11890.23	175.10	0.00	175.10	218.90	300.56	1061.66	1362.22	2.00	1758.22
10	**Rajsamand**	4485.42	364.89	0.27	0.00	0.27	1.44	1.37	35.02	36.38	0.00	38.09
11	**Sikar**	7428.38	2.75	0.00	0.00	0.00	0.00	1.00	0.09	1.09	0.00	1.09
12	**Sirohi**	4961.34	4906.68	52.31	0.00	52.31	29.20	99.19	1092.82	1192.01	0.00	1273.52
13	**Udaipur**	11459.12	205.67	0.73	0.00	0.73	2.01	2.50	13.03	15.53	0.07	18.35
	Sub Total	**179791.66**	**71817.47**	**1538.05**	**0.00**	**1538.05**	**265.43**	**8668.26**	**5542.55**	**14210.82**	**40.92**	**16055.22**
iii)	**Daman& Diu**											
1	**Diu**	34.39	34.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**34.39**	**34.39**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grant Total	**308009.54**	**184863.63**	**1538.05**	**0.00**	**1538.05**	**265.43**	**8668.26**	**5542.55**	**14210.82**	**40.92**	**16055.22**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
				2	3	4	5	6	7	8	9	10
I	**Basin : Mahanadi**											
i)	**JHARKHAND**											
	Simdega	3639.71	145.66	0.21	0.00	0.21	0.10	0.16	0.38	0.54	0.53	1.37
	Sub Total	**3639.71**	**145.66**	**0.21**	**0.00**	**0.21**	**0.10**	**0.16**	**0.38**	**0.54**	**0.53**	**1.37**
ii)	**ODISHA**											
1	**Anugul**	6129.61	2060.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.95	30.95
2	**Balangir**	6332.43	6332.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	102.43	102.43
3	**Bargarh**	5583.76	5583.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1013.15	1013.15
4	**Boudh**	3006.39	3006.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	270.94	270.94
5	**Cuttack**	3802.97	3683.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	692.99	692.99
6	**Deogarh**	2726.66	271.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.52	4.52
7	**Dhenkanal**	4310.65	660.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.82	33.82
8	**Ganjam**	8197.71	499.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	107.04	107.04
9	**Jagatsinghapur**	1678.55	1678.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	571.86	571.86
10	**Jajapur**	2792.19	41.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.80	3.80
11	**Jharsuguda**	2036.85	2036.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.43	8.43
12	**Kalahandi**	7633.06	6570.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	549.18	549.18
13	**Kandhamal**	7770.03	5807.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.31	10.31
14	**Kendrapara**	2388.95	1292.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.28	219.28
15	**Khordha**	2654.72	2462.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	240.40	240.40
16	**NABARANGPUR**	5236.39	1655.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.60	25.60
17	**Nayagarh**	3755.00	3458.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.37	60.37
18	**Nuapada**	3728.43	3728.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	136.90	136.90
19	**Puri**	3433.02	3433.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	981.55	981.55
20	**Rayagada**	7126.04	104.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91	4.91
21	**Sambalpur**	6479.54	5266.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	177.41	177.41
22	**Sonepur**	2271.97	2271.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	496.44	496.44
23	**Sundargarh**	9353.52	3941.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.23	80.23
	Sub Total	**108428.44**	**65847.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5822.50**	**5822.50**
iii)	**MADHYA PRADESH**											
1	**Anuppur**	3637.40	121.78	0.10	0.00	0.10	0.01	0.46	0.42	0.88	0.43	1.42
2	**Balaghat**	8897.36	0.10	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.02
3	**Dindori**	5543.20	27.29	0.06	0.00	0.06	0.00	0.00	0.03	0.03	0.07	0.17
4	**Mandla**	7201.48	2.50	0.07	0.00	0.07	0.01	0.00	0.06	0.06	0.03	0.17
	Sub Total	**25279.44**	**151.67**	**0.24**	**0.00**	**0.24**	**0.03**	**0.46**	**0.51**	**0.97**	**0.53**	**1.78**
iv)	**CHHATISGARH**											
1	**Bastar**	10152.59	347.86	0.40	0.00	0.40	0.15	0.87	0.05	0.93	0.91	2.39
2	**Bilaspur**	8022.86	7190.01	515.86	0.00	515.86	34.27	207.54	18.60	226.14	1.11	777.37
3	**Dhamtari**	3915.57	3903.65	882.59	0.00	882.59	2.85	301.30	3.77	305.07	21.42	1211.94
4	**Durg**	8287.60	8256.76	556.53	0.00	556.53	14.36	292.06	6.09	298.15	26.01	895.05
5	**Jashpur**	5583.19	3918.09	32.19	0.02	32.21	1.43	1.02	13.86	14.88	15.84	64.37
6	**Janjgir-Champa**	3723.65	3723.65	1951.11	0.00	1951.11	10.54	34.55	4.76	39.31	11.90	2012.86
7	**Kabirdham**	4061.73	3465.32	148.90	0.00	148.90	0.19	448.35	2.19	450.54	18.85	618.48
8	**Korba**	6333.50	6333.17	45.32	0.00	45.32	9.31	2.02	7.44	9.46	23.67	87.76
9	**Korea**	6383.21	2478.01	12.14	0.00	12.14	1.24	1.56	3.45	5.02	8.36	26.76
10	**Mahasamund**	4559.96	4559.96	387.75	0.00	387.75	65.99	467.09	7.33	474.42	56.55	984.71
11	**Raigarh**	6819.11	6818.53	185.61	0.21	185.82	43.29	318.15	6.60	324.75	71.28	625.15
12	**Raipur**	11995.63	11995.63	1084.35	0.00	1084.35	35.21	216.74	5.11	221.85	19.16	1360.57
13	**Rajnandgaon**	7764.54	5467.60	304.25	0.00	304.25	13.34	263.25	6.99	270.24	9.29	597.12
14	**Surguja**	15125.37	2477.40	7.64	0.52	8.16	0.65	0.57	2.22	2.79	14.19	25.79
15	**Kanker**	6567.07	2278.90	20.84	0.00	20.84	8.88	79.05	1.08	80.13	0.00	109.85
	Sub Total	**109295.58**	**73214.54**	**6135.48**	**0.76**	**6136.24**	**241.70**	**2634.12**	**89.54**	**2723.66**	**298.55**	**9400.15**
v)	**MAHARASHTRA**											
1	**Gadchirol**	13966.06	298.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Gondiya**	5273.77	23.83	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**19239.83**	**322.39**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**265883.00**	**139681.52**	**6135.93**	**0.76**	**6136.69**	**241.82**	**2634.74**	**90.44**	**2725.18**	**6122.11**	**15225.80**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
II	**Basin : Subernarekha & Bhurhabalang**											
i)	**JHARKHAND**											
1	**Bokaro**	2688.22	17.01	0.00	0.00	0.00	0.04	0.02	0.10	0.12	0.02	0.19
2	**Khunti**	2603.07	1297.28	3.33	0.00	3.33	23.04	16.35	23.17	39.52	29.34	95.23
3	**West Singhbhum**	6941.29	2687.33	1.90	0.00	1.90	1.91	0.00	2.23	2.23	1.68	7.73
4	**East Singhbum**	3433.65	3119.28	8.53	0.00	8.53	8.48	4.11	3.07	7.18	0.55	24.75
5	**Ramgarh**	1259.52	136.64	0.00	0.00	0.00	1.23	0.00	1.39	1.39	0.33	2.94
6	**Ranchi**	4743.84	2802.26	0.00	0.00	0.00	8.84	14.35	44.30	58.65	14.82	82.31
7	**Saraikela Kharsawan**	2546.17	2536.09	9.44	0.00	9.44	20.81	0.00	11.62	11.62	18.26	60.13
	Sub Total	**24215.76**	**12595.89**	**23.21**	**0.00**	**23.21**	**64.36**	**34.83**	**85.88**	**120.70**	**65.00**	**273.27**
ii)	**ODISHA**											
1	**Baleshwar**	3733.69	2644.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	545.30	545.30
2	**Mayurbhanj**	10035.64	7146.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	431.85	431.85
	Sub Total	**13769.33**	**9791.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**977.15**	**977.15**
iii)	**WEST BENGAL**											
1	**Pashchim Medinipur**	9021.98	2387.68	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Purba Medinipur**	3893.57	85.26	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Puruliya**	6003.10	931.92	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**18918.65**	**3404.86**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**56903.74**	**25792.15**	**23.21**	**0.00**	**23.21**	**64.36**	**34.83**	**85.88**	**120.70**	**1042.15**	**1250.42**
III	**Basin : Brahamani and Baitarni**											
i)	**JHARKHAND**											
1	**Gumla**	5149.51	4312.74	2.35	0.00	2.35	18.27	0.00	22.86	22.86	22.45	65.95
2	**Khunti**	2603.07	1305.80	3.35	0.00	3.35	23.20	16.45	23.32	39.77	29.53	95.85
3	**Latehar**	4092.97	11.85	0.01	0.00	0.01	0.06	0.08	0.08	0.16	0.04	0.27
4	**Lohardaga**	1439.38	911.85	4.17	0.00	4.17	15.05	4.94	20.04	24.99	23.27	67.47
5	**West Singhbhum**	6941.29	4253.95	3.02	0.00	3.02	3.03	0.00	3.53	3.53	2.66	12.23
6	**Ranchi**	4743.84	1150.39	0.00	0.00	0.00	3.63	5.89	18.19	24.08	6.08	33.79
7	**Simdega**	3639.71	3494.05	4.96	0.00	4.96	2.28	3.78	9.22	13.00	12.66	32.91
	Sub Total	**28609.77**	**15440.63**	**17.86**	**0.00**	**17.86**	**65.52**	**31.15**	**97.24**	**128.39**	**96.70**	**308.47**
ii)	**CHATTISGARH**											
1	**Jashpur**	5583.19	1205.37	9.90	0.01	9.91	0.44	0.32	4.26	4.58	4.87	19.80
2	**Surguja**	15125.37	158.79	0.49	0.03	0.52	0.04	0.04	0.14	0.18	0.91	1.65
	Sub Total	**20708.56**	**1364.16**	**10.3927421**	**0.040071**	**10.4328133**	**0.48199421**	**0.351527316**	**4.4062373**	**4.757764615**	**5.78226725**	**21.45483935**
iii)	**ODISHA**											
1	**Anugul**	6129.61	4069.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.11	61.11
2	**Baleshwar**	3733.69	1081.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	222.90	222.90
3	**Bhadrak**	2390.28	2390.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	754.44	754.44
4	**Cuttack**	3802.97	119.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.45	22.45
5	**Deogarh**	2706.30	2434.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.80	40.80
6	**Dhenkanal**	4310.65	3650.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	187.02	187.02
7	**Jajapur**	2792.19	2750.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	250.75	250.75
8	**Kendrapara**	2388.95	1096.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	185.95	185.95
9	**Kendujhar**	7996.91	7996.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	341.11	341.11
10	**Mayurbhanj**	10035.64	2889.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.57	174.57
11	**Sambalpur**	6479.54	1212.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.85	40.85
12	**Sundargarh**	9353.52	5412.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	110.19	110.19
	Sub Total	**62120.25**	**35102.68**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2392.14**	**2392.14**
	Grand Total	**111438.58**	**51907.47**	**28.26**	**0.04**	**28.30**	**66.00**	**31.50**	**101.64**	**133.14**	**2494.63**	**2722.07**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

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				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
IV	**Basin : Godavari**											
i)	**ANDHRA PRADESH**											
1	**East Godavari**	10571.11	5889.31	1005.84	0.00	1005.84	115.13	368.26	1.82	370.07	85.95	1576.99
2	**Vishakhapatanam**	11115.36	3614.27	151.91	0.00	151.91	93.07	46.09	16.63	62.71	72.36	380.06
3	**West Godavari**	7582.74	1682.39	361.79	0.00	361.79	29.16	405.18	1.02	406.20	22.33	819.48
	Sub Total	**29269.21**	**11185.97**	**1519.54**	**0.00**	**1519.54**	**237.36**	**819.52**	**19.46**	**838.98**	**180.64**	**2776.53**
ii)	**TELANGANA**											
1	**Adilabad**	15526.99	15526.99	47.73	0.00	47.73	90.42	548.19	131.62	679.81	15.42	833.38
2	**Karimnagar**	11539.77	11530.94	1.22	0.00	1.22	68.61	443.00	1913.00	2356.00	4.34	2430.16
3	**Khammam**	15646.02	9996.76	126.64	0.00	126.64	258.87	345.96	248.57	594.53	53.79	1033.84
4	**Medak**	9489.96	9128.93	0.00	0.00	0.00	1.04	1053.50	37.66	1091.16	1.90	1094.09
5	**Nizamabad**	7674.38	7674.38	0.00	0.00	0.00	0.25	1268.38	0.39	1268.77	7.23	1276.25
6	**Rangareddi**	7358.88	505.32	0.00	0.00	0.00	0.33	30.60	0.64	31.24	0.92	32.49
7	**Warangal**	12447.42	6248.2	64.39	0.00	64.39	231.19	486.70	743.59	1230.29	19.96	1545.82
	Sub Total	**79683.42**	**60611.52**	**239.98**	**0.00**	**239.98**	**650.70**	**4176.33**	**3075.46**	**7251.79**	**103.55**	**8246.03**
iii)	**KARNATAKA**											
1	**Bidar**	5293.88	4469.12	0.00	0.00	0.00	0.00	168.06	146.69	314.75	2.68	317.44
2	**Gulbarga**	10687.27	0.18	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02
	Sub Total	**15981.15**	**4469.30**	**0.00**	**0.00**	**0.00**	**0.00**	**168.07**	**146.69**	**314.76**	**2.69**	**317.45**
iv)	**MADHYA PRADESH**											
1	**Balaghat**	8897.36	6686.72	608.28	0.00	608.28	97.69	18.25	332.41	350.65	71.82	1128.45
2	**Betul**	9690.38	2129.74	70.26	0.00	70.26	21.63	77.25	188.51	265.77	65.80	423.46
3	**Chhindwara**	11361.38	7972.16	107.39	0.00	107.39	58.87	385.98	908.11	1294.08	117.24	1577.58
4	**Mandla**	7201.48	709.24	21.23	0.00	21.23	3.64	0.00	16.05	16.05	7.37	48.29
5	**Seoni**	8422.7	6269.58	619.15	0.00	619.15	85.49	194.10	381.54	575.64	140.04	1420.32
	Sub Total	**45573.30**	**23767.44**	**1426.31**	**0.00**	**1426.31**	**267.32**	**675.58**	**1826.61**	**2502.19**	**402.28**	**4598.10**
v)	**CHHATISGARH**											
1	**Bastar**	10152.59	9804.73	11.27	0.00	11.27	4.37	24.63	1.48	26.10	25.60	67.34
2	**Bijapur**	8511.40	8511.40	0.00	0.00	0.00	30.07	0.35	0.69	1.04	1.33	32.44
3	**Dantewada**	8466.39	8466.39	0.00	0.00	0.00	0.89	1.32	0.04	1.36	0.98	3.23
4	**Dhamtari**	3915.57	11.93	2.70	0.00	2.70	0.01	0.92	0.01	0.93	0.07	3.70
5	**Durg**	8287.60	30.84	2.08	0.00	2.08	0.05	1.09	0.02	1.11	0.10	3.34
6	**Narayanpur**	4131.46	4131.46	0.10	0.00	0.10	0.00	0.66	0.05	0.71	0.58	1.39
7	**Rajnandgaon**	7764.54	2218.36	123.44	0.00	123.44	5.41	106.81	2.84	109.64	3.77	242.27
8	**Kanker**	6567.07	4288.17	39.21	0.00	39.21	16.72	148.74	2.03	150.77	0.00	206.70
	Sub Total	**57796.62**	**37463.28**	**178.80**	**0.00**	**178.80**	**57.52**	**284.52**	**7.16**	**291.68**	**32.42**	**560.42**

contd..

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
vi)	**MAHARASHTRA**											
1	**Ahmadnagar**	16510.41	10368.10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Akola**	5214.95	0.23	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Amravati**	11765.11	4020.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Aurangabad**	9772.28	8725.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Bhandara**	3719.41	3719.41	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Bid**	10244.73	8798.17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Buldana**	9409.67	3796.29	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Chandrapur**	10917.27	10917.27	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Gadchiroli**	13966.06	13667.51	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Gondiya**	5273.77	5249.95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Hingoli**	4514.84	4514.84	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Jalgaon**	11349.74	15.66	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Jalna**	7510.09	7386.59	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
14	**Latur**	7009.52	7007.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
15	**Nagpur**	9564.49	9564.49	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
16	**Nanded**	10260.74	10260.74	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
17	**Nashik**	15021.09	6973.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
18	**Osmanabad**	7347.20	2980.50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
19	**Parbhani**	6154.98	6154.98	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
20	**Pune**	15185.75	81.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
21	**Thane**	9208.22	3.10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
22	**Wardha**	6084.96	6084.96	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
23	**Washim**	5017.05	3960.73	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
24	**Yavatmal**	13069.20	13069.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**224091.53**	**147320.64**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
vii)	**ODISHA**											
1	**Kalahandi**	7633.06	417.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.90	34.90
2	**Koraput**	8180.27	6693.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	497.81	497.81
3	**Malkangiri**	5650.92	5650.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.65	64.65
4	**Nabarangpur**	5236.39	3581.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.38	55.38
5	**Rayagada**	7126.04	871.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.90	40.90
	Sub Total	**33826.68**	**17213.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**693.65**	**693.65**
viii)	**PUDUCHERRY**											
1	**Yanam**	36.94	36.94	3.12	0.00	3.12	0.00	0.00	0.00	0.00	0.00	3.12
	Sub Total	**36.94**	**36.94**	**3.12**	**0.00**	**3.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.12**
	Grand Total	**486258.85**	**302069.06**	**3367.75**	**0.00**	**3367.75**	**1212.90**	**6124.02**	**5075.39**	**11199.41**	**1415.23**	**17195.29**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
V	**Basin : Krishna**											
i)	**ANDHRA PRADESH**											
1	**Anantapur**	18987.72	4185.59	31.84	0.00	31.84	7.62	263.75	0.73	264.48	1.69	305.64
2	**Guntur**	11186.51	6545.38	883.57	0.00	883.57	12.32	651.73	49.37	701.09	78.15	1675.14
3	**Krishna**	8365.25	4686.80	947.93	0.00	947.93	91.58	351.85	36.93	388.78	48.68	1476.97
4	**Kurnool**	17503.31	9696.79	287.45	0.00	287.45	36.00	459.51	90.19	549.70	98.03	971.18
5	**Prakasam**	17389.37	657.16	6.63	0.00	6.63	3.20	44.03	0.73	44.76	1.25	55.85
	Sub Total	**73432.16**	**25771.72**	**2157.42**	**0.00**	**2157.42**	**150.72**	**1770.87**	**177.95**	**1948.82**	**227.81**	**4484.78**
ii)	**TELANGANA**											
1	**Hyderabad**	173.43	173.43	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Karimnagar**	11539.77	8.83	0.00	0.00	0.00	0.05	0.34	1.46	1.80	0.00	1.86
3	**Khammam**	15646.02	4864.63	61.63	0.00	61.63	125.97	168.35	120.96	289.31	26.18	503.09
4	**Mahbubnagar**	17974.02	17974.02	114.15	0.00	114.15	18.85	1800.51	66.11	1866.62	120.02	2119.64
5	**Medak**	9489.96	361.03	0.00	0.00	0.00	0.04	41.66	1.49	43.15	0.07	43.27
6	**Nalgonda**	13742.14	13742.14	37.43	0.00	37.43	75.44	1362.37	369.52	1731.89	48.29	1893.05
7	**Rangareddi**	7358.88	6853.56	0.00	0.00	0.00	4.50	415.03	8.66	423.69	12.44	440.63
8	**Warangal**	12447.42	6199.23	63.88	0.00	63.88	229.37	482.88	737.76	1220.64	19.80	1533.70
	Sub Total	**88371.64**	**50176.87**	**277.09**	**0.00**	**277.09**	**454.23**	**4271.15**	**1305.97**	**5577.12**	**226.81**	**6535.24**
iii)	**KARNATAKA**											
1	**Bagalkot**	6432.04	6432.04	20.26	0.00	20.26	1.40	1174.97	49.29	1224.26	1082.26	2328.18
2	**Belgaum**	13120.75	12113.73	553.10	0.00	553.10	2.83	1289.85	1267.91	2557.76	817.05	3930.75
3	**Bellary**	8311.09	8311.09	776.07	0.00	776.07	22.21	751.98	30.37	782.35	414.53	1995.16
4	**Bidar**	5293.88	824.76	0.00	0.00	0.00	0.00	31.02	27.07	58.09	0.50	58.58
5	**Bijapur**	10261.00	10261.00	0.00	0.00	0.00	30.07	0.35	0.69	1.04	1.33	32.44
6	**Chikmagalur**	7167.73	6264.50	54.27	0.00	54.27	55.80	228.76	1.51	230.27	119.96	460.30
7	**Chitradurga**	8360.22	8360.22	18.20	0.00	18.20	0.00	925.06	0.00	925.06	0.00	943.26
8	**Dakshin kannad**	4578.68	1.09	0.00	0.00	0.00	0.00	0.04	0.10	0.14	0.05	0.19
9	**Davangere**	5875.62	5875.62	847.89	0.00	847.89	15.34	783.64	8.60	792.24	84.64	1740.11
10	**Dharwad**	4202.26	2780.03	104.39	0.00	104.39	0.00	137.71	0.00	137.71	0.00	242.10
11	**Gadag**	4563.79	4563.79	305.37	0.00	305.37	1.84	416.64	3.73	420.37	120.18	847.76
12	**Gulbarga**	10687.27	10687.08	208.64	0.00	208.64	10.18	488.01	118.44	606.45	155.27	980.53
13	**Hassan**	6789.18	1384.62	73.62	0.00	73.62	41.42	47.71	1.03	48.74	7.39	171.16
14	**Haveri**	4743.98	4623.62	50.04	0.00	50.04	94.52	614.17	0.19	614.37	202.70	961.63
15	**Koppal**	5468.71	5468.71	377.36	0.00	377.36	0.36	825.52	0.00	825.52	2.25	1205.49
16	**Raichur**	8276.99	8276.99	1115.12	0.00	1115.12	7.89	265.71	141.66	407.37	183.94	1714.32
17	**Shimoga**	8361.30	5694.09	289.44	0.00	289.44	346.98	220.28	43.58	263.87	56.98	957.27
18	**Tumkur**	10543.89	3897.56	15.15	0.00	15.15	33.26	534.91	3.33	538.25	0.00	586.66
19	**Udupi**	3841.79	3.06	0.00	0.00	0.00	0.00	0.01	0.19	0.20	0.05	0.25
20	**Uttar kannad**	10048.65	664.06	0.00	0.00	0.00	3.98	5.59	6.87	12.46	9.46	25.90
21	**Yadgir**	5163.02	5163.02	911.41	0.00	911.41	29.74	220.35	106.92	327.27	22.95	1291.37
	Sub Total	**152091.84**	**111650.68**	**5720.33**	**0.00**	**5720.33**	**697.82**	**8962.28**	**1811.49**	**10773.77**	**3281.48**	**20473.40**
iv)	**MAHARASHTRA**											
1	**Ahmadnagar**	16510.41	6130.16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Bid**	10244.73	1446.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Kolhapur**	7500.31	7237.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Latur**	7009.52	2.45	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Osmanabad**	7347.20	4366.70	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Pune**	15185.75	14790.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Raigarh**	6942.67	2.53	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Ratnagiri**	8050.94	14.49	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Sangli**	8349.99	8346.19	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Satara**	10223.37	10187.31	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Sindhudurg**	4966.78	124.14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Solapur**	14495.87	14495.87	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Thane**	9208.22	2.55	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**126035.76**	**67146.95**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**439931.40**	**254746.22**	**8154.84**	**0.00**	**8154.84**	**1302.77**	**15004.30**	**3295.40**	**18299.71**	**3736.10**	**31493.42**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Note : (1)Totals may not tally due to rounding off.

Note : (2) Data not availabe.

Note : (3)Estimated on the basis of the percentage of the area of each district, within the basin, to the district as a whole.

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
VI	**Basin : Cauvery**											
i)	**KARNATAKA**											
1	**Bengaluru Urban**	2175.82	987.82	0.00	0.00	0.00	0.74	42.44	0.00	42.44	0.00	43.18
2	**Bangalore Rural**	2294.62	978.92	0.00	0.00	0.00	0.00	89.68	0.00	89.68	0.15	89.83
3	**Chamarajanagar**	5688.19	5688.19	210.40	0.00	210.40	52.90	440.70	18.70	459.40	0.00	722.70
4	**Chikballpur**	4188.56	6.40	0.00	0.00	0.00	0.00	0.77	0.00	0.77	0.00	0.77
5	**Chikmagalur**	7167.73	751.01	6.51	0.00	6.51	6.69	27.42	0.18	27.61	14.38	55.18
6	**Hassan**	6789.18	4941.78	262.75	0.00	262.75	147.82	170.28	3.67	173.94	26.37	610.88
7	**Kodagu**	4115.60	2898.68	8.63	0.00	8.63	0.63	0.75	0.00	0.75	0.94	10.95
8	**Mandya**	4942.61	4942.61	906.72	0.00	906.72	148.54	160.25	54.85	215.10	12.52	1282.88
9	**Mysore**	6319.07	6319.07	917.97	0.00	917.97	124.40	198.42	102.44	300.86	2.15	1345.38
10	**Ramanagara**	3511.62	3511.62	78.95	0.00	78.95	16.88	238.68	0.00	238.68	4.25	338.76
11	**Tumkur**	10543.89	3992.00	15.52	0.00	15.52	34.07	547.88	3.41	551.29	0.00	600.87
	Sub Total	**57736.89**	**35018.10**	**2407.45**	**0.00**	**2407.45**	**532.67**	**1917.26**	**183.25**	**2100.52**	**60.76**	**5101.40**
ii)	**KERALA**											
1	**Idukki**	5106.26	385.72	0.92	0.01	0.93	12.58	3.13	6.30	9.44	8.42	31.36
2	**Kannur**	2957.80	1.16	0.00	0.00	0.00	0.01	0.00	0.04	0.04	0.01	0.06
3	**Kozhikode**	2347.84	4.42	0.02	0.00	0.02	0.01	0.00	0.04	0.05	0.01	0.09
4	**Malappuram**	3599.11	1.90	0.01	0.00	0.01	0.02	0.01	0.08	0.09	0.03	0.16
5	**Palakkad**	4542.91	619.06	57.84	0.03	57.87	8.00	11.91	17.81	29.72	23.31	118.90
6	**Wayanad**	2141.18	1936.14	0.00	0.00	0.00	0.63	0.00	0.66	0.66	111.78	113.08
	Sub Total	**20695.10**	**2948.40**	**58.79**	**0.05**	**58.83**	**21.25**	**15.06**	**24.94**	**39.99**	**143.57**	**263.65**
iii)	**TAMIL NADU**											
1	**Ariyalur**	1970.10	1623.55	60.55	0.00	60.55	21.67	177.21	40.92	218.14	0.00	300.36
2	**Coimbatore**	4708.71	2569.37	103.24	0.00	103.24	0.00	172.69	356.85	529.53	0.00	632.78
3	**Cuddalore**	3725.96	604.91	60.70	0.00	60.70	6.71	154.18	11.81	165.99	0.90	234.31
4	**Dharmapuri**	4529.54	1906.74	1.65	0.65	2.31	3.15	3.42	244.79	248.21	0.00	253.67
5	**Dindigul**	6164.99	4429.05	16.64	0.00	16.64	32.79	32.82	681.20	714.02	6.88	770.33
6	**Erode**	5802.54	5802.54	467.93	0.00	467.93	0.70	231.47	541.90	773.37	0.00	1242.00
7	**Karur**	2928.71	2928.71	115.48	2.04	117.52	0.00	98.43	266.16	364.59	0.00	482.11
8	**Krishnagiri**	5142.53	1909.10	3.16	0.00	3.16	26.97	61.20	121.28	182.48	0.00	212.60
9	**Nagapattinam**	2516.24	2516.20	1192.82	0.00	1192.82	0.00	0.00	0.00	0.00	6.92	1199.74
10	**Namakkal**	3434.37	3074.96	38.99	0.00	38.99	0.00	78.89	469.51	548.40	6.91	594.31
11	**Perambalur**	1768.81	625.19	0.00	0.00	0.00	9.31	8.86	94.06	102.92	0.00	112.23
12	**Pudukkottai**	4740.11	734.16	8.60	0.00	8.60	77.37	52.27	10.95	63.22	0.00	149.19
13	**Salem**	5247.41	3027.08	10.21	0.00	10.21	0.00	108.46	436.88	545.34	0.00	555.55
14	**Thanjavur**	3438.78	2221.95	880.26	0.00	880.26	0.19	245.92	0.99	246.90	0.00	1127.35
15	**The Nilgiris**	2572.79	2213.40	0.00	0.00	0.00	0.00	0.00	10.30	10.30	0.00	10.30
16	**Thiruvarur**	2302.70	2300.40	1493.96	0.00	1493.96	0.00	0.00	0.00	0.00	0.00	1493.96
17	**Tiruchirappalli**	4564.08	4032.11	291.73	0.00	291.73	25.34	76.10	324.17	400.27	0.00	717.34
18	**Tiruppur**	5266.55	4983.33	253.64	2.01	255.65	19.73	150.05	700.73	850.79	0.00	1126.17
	Sub Total	**70824.92**	**47502.75**	**4999.57**	**4.70**	**5004.27**	**223.92**	**1651.98**	**4312.51**	**5964.48**	**21.62**	**11214.29**
iv)	**PONDICHERY**											
1	**Karaikal**	154.98	154.98	39.10	0.00	39.10	0.00	0.30	0.00	0.30	0.13	39.53
	Sub Total	**154.98**	**154.98**	**39.10**	**0.00**	**39.10**	**0.00**	**0.30**	**0.00**	**0.30**	**0.13**	**39.53**
	Grand Total	**149411.89**	**85624.23**	**7504.90**	**4.74**	**7509.65**	**777.85**	**3584.60**	**4520.70**	**8105.29**	**226.07**	**16618.87**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
VII	**Basin : Penner**											
i)	**ANDHRA PRADESH**											
1	**Anantapur**	18987.72	14802.13	112.62	0.00	112.62	26.95	932.75	2.58	935.33	5.99	1080.88
2	**Chittoor**	14957.01	4929.17	8.57	0.00	8.57	122.25	393.63	53.51	447.14	0.25	578.21
3	**Kurnool**	17503.31	7747.18	229.65	0.00	229.65	28.77	367.12	72.06	439.18	78.32	775.92
4	**Prakasam**	17389.37	945.21	9.54	0.00	9.54	4.60	63.33	1.05	64.38	1.80	80.33
5	**SPSR Nellore**	13090.71	4151.44	411.56	0.00	411.56	253.29	272.32	21.17	293.49	18.17	976.51
6	**Kadapa**	14969.72	14877.73	9.08	0.00	9.08	91.45	1181.39	25.75	1207.14	13.35	1321.02
	Sub Total	**96897.84**	**47452.86**	**781.02**	**0.00**	**781.02**	**527.31**	**3210.55**	**176.11**	**3386.66**	**117.88**	**4812.87**
ii)	**KARNATAKA**											
1	**Bangalore Rural**	2294.62	380.08	0.00	0.00	0.00	0.00	34.82	0.00	34.82	0.06	34.88
2	**Chikballpur**	4188.56	3367.63	0.00	0.00	0.00	0.00	404.98	0.00	404.98	0.00	404.98
3	**Kolar**	3968.44	388.52	0.00	0.00	0.00	0.00	19.72	0.00	19.72	0.00	19.72
4	**Tumkur**	10543.89	2654.33	10.32	0.00	10.32	22.65	364.29	2.27	366.56	0.00	399.53
	Sub Total	**20995.51**	**6790.56**	**10.32**	**0.00**	**10.32**	**22.65**	**823.81**	**2.27**	**826.07**	**0.06**	**859.10**
	Grand Total	**117893.35**	**54243.42**	**791.34**	**0.00**	**791.34**	**549.96**	**4034.35**	**178.38**	**4212.73**	**117.94**	**5671.98**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
VIII	**Basin : East Flowing Rivers from Mahanadi to Pennar**											
i)	**ANDHRA PRADESH**											
1	**East Godavari**	10571.11	4681.80	799.60	0.00	799.60	91.52	292.75	1.44	294.20	68.33	1253.65
2	**Guntur**	11186.51	4641.13	626.51	0.00	626.51	8.74	462.12	35.00	497.13	55.42	1187.79
3	**Krishna**	8365.25	3678.45	743.98	0.00	743.98	71.87	276.15	28.99	305.14	38.21	1159.20
4	**Kurnool**	17503.31	59.34	1.76	0.00	1.76	0.22	2.81	0.55	3.36	0.60	5.94
5	**Prakasam**	17389.37	15786.99	159.39	0.00	159.39	76.82	1057.80	17.52	1075.32	30.12	1341.66
6	**SPSR Nellore**	13090.71	2848.33	282.37	0.00	282.37	173.78	186.84	14.52	201.37	12.47	669.99
7	**Srikakulam**	5730.80	5730.80	1136.52	0.00	1136.52	568.87	54.27	57.15	111.42	53.17	1869.98
8	**Vishakhaptanam**	11115.36	7501.09	315.28	0.00	315.28	193.16	95.65	34.50	130.16	150.19	788.78
9	**Vizianagaram**	5821.45	5821.45	392.42	0.00	392.42	807.99	296.41	66.86	363.27	22.94	1586.62
10	**West Godavari**	7582.74	5900.34	1268.84	0.00	1268.84	102.28	1421.01	3.57	1424.58	78.30	2874.01
	Sub Total	**108356.61**	**56649.72**	**5726.68**	**0.00**	**5726.68**	**2095.27**	**4145.82**	**260.12**	**4405.94**	**509.74**	**12737.63**
ii)	**TELANGANA**											
1	**Khammam**	15646.02	784.64	9.94	0.00	9.94	20.32	27.15	19.51	46.66	4.22	81.15
	Sub Total	**15646.02**	**784.64**	**9.94**	**0.00**	**9.94**	**20.32**	**27.15**	**19.51**	**46.66**	**4.22**	**81.15**
iii)	**ODISHA**											
1	**Gajapati**	3928.20	3928.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	280.93	280.93
2	**Ganjam**	8197.71	7698.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1649.75	1649.75
3	**Kalahandi**	7633.06	645.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.95	53.95
4	**Kandhamal**	7770.03	1962.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	3.49
5	**Khordha**	2654.72	192.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.78	18.78
6	**Koraput**	8180.27	1486.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	110.59	110.59
7	**Nayagarh**	3755.00	296.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	5.17
8	**Rayagada**	7126.04	6150.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	288.79	288.79
	Sub Total	**49245.03**	**22360.83**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2411.45**	**2411.45**
	Grand Total	**173247.66**	**79795.19**	**5736.62**	**0.00**	**5736.62**	**2115.58**	**4172.98**	**279.63**	**4452.61**	**2925.41**	**15230.22**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
IX	**Basin : East Flowing Rivers from Pennar to Kanyakumari**											
i)	**ANDHRA PRADESH**											
1	**Chittoor**	14957.01	10027.85	17.43	0.00	17.43	248.70	800.81	108.85	909.66	0.52	1176.31
2	**SPSR Nellore**	13090.71	6090.94	603.83	0.00	603.83	371.62	399.55	31.06	430.61	26.66	1432.73
3	**YSR Cudappah**	14969.72	92.00	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**43017.44**	**16210.79**	**621.26**	**0.00**	**621.26**	**620.33**	**1200.36**	**139.91**	**1340.27**	**27.18**	**2609.04**
ii)	**KARNATAKA**											
1	**Bengaluru Urban**	2175.82	1188.00	0.00	0.00	0.00	0.90	51.04	0.00	51.04	0.00	51.94
2	**Bangalore Rural**	2294.62	935.62	0.00	0.00	0.00	0.00	85.72	0.00	85.72	0.14	85.86
3	**Chikballpur**	4188.56	814.53	0.00	0.00	0.00	0.00	97.95	0.00	97.95	0.00	97.95
4	**Kolar**	3968.44	3579.91	0.00	0.00	0.00	0.00	181.68	0.00	181.68	0.00	181.68
	Sub Total	**12627.44**	**6518.06**	**0.00**	**0.00**	**0.00**	**0.90**	**416.39**	**0.00**	**416.39**	**0.14**	**417.43**
iii)	**KERALA**											
1	**Idukki**	5106.26	38.13	0.09	0.00	0.09	1.24	0.31	0.62	0.93	0.83	3.10
2	**Kollam**	2556.16	11.68	0.06	0.00	0.06	0.00	0.00	0.13	0.13	0.08	0.28
3	**Pathanamthitta**	2709.55	4.92	0.05	0.00	0.05	0.00	0.00	0.04	0.04	0.00	0.10
4	**Thiruvananthapuram**	2246.81	4.33	0.07	0.00	0.07	0.01	0.00	0.06	0.06	0.01	0.16
	Sub Total	**12618.78**	**59.06**	**0.28**	**0.00**	**0.28**	**1.26**	**0.31**	**0.86**	**1.17**	**0.92**	**3.63**
iv)	**TAMIL NADU**											
1	**Ariyalur**	1970.10	346.55	12.93	0.00	12.93	4.62	37.83	8.74	46.56	0.00	64.11
2	**Chennai**	128.00	128.00	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Cuddalore**	3725.96	3121.05	313.18	0.00	313.18	34.62	795.52	60.94	856.46	4.67	1208.92
4	**Dharmapuri**	4529.54	2622.80	2.28	0.90	3.17	4.34	4.71	336.72	341.43	0.00	348.94
5	**Dindigul**	6164.99	1735.94	6.52	0.00	6.52	12.85	12.87	266.99	279.86	2.70	301.93
6	**Kanchipuram**	4475.20	4475.19	5.01	0.00	5.01	554.51	93.68	335.17	428.85	0.00	988.37
7	**Kanniyakumari**	1746.80	70.81	3.54	0.00	3.54	4.72	1.66	1.54	3.19	0.00	11.46
8	**Krishnagiri**	5142.53	3233.43	5.34	0.00	5.34	45.67	103.66	205.40	309.06	0.00	360.08
9	**Madurai**	3767.70	3767.63	190.30	0.00	190.30	179.31	10.11	395.82	405.93	0.00	775.54
10	**Namakkal**	3434.37	359.41	4.56	0.00	4.56	0.00	9.22	54.88	64.10	0.81	69.46
11	**Perambalur**	1768.81	1143.62	0.00	0.00	0.00	17.03	16.21	172.06	188.27	0.00	205.30
12	**Pudukkottai**	4740.11	4005.95	46.92	0.00	46.92	422.17	285.19	59.78	344.97	0.00	814.06
13	**Ramanathapuram**	4040.52	4040.51	0.00	0.00	0.00	507.89	11.38	116.64	128.02	0.00	635.91
14	**Salem**	5247.41	2220.33	7.49	0.00	7.49	0.00	79.55	320.45	400.00	0.00	407.49
15	**Sivaganga**	4325.62	4325.62	0.00	0.00	0.00	637.49	29.12	109.46	138.58	0.00	776.07
16	**Thanjavur**	3438.78	1216.83	482.06	0.00	482.06	0.11	134.67	0.54	135.22	0.00	617.39
17	**Theni**	2909.55	2907.60	100.78	0.00	100.78	12.62	104.84	425.06	529.90	0.00	643.31
18	**Thiruvallur**	3377.77	3377.77	0.00	0.00	0.00	193.80	711.10	78.47	789.57	0.00	983.37
19	**Thoothukkudi**	4763.91	4763.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
20	**Tiruchirappalli**	4564.08	531.97	38.49	0.00	38.49	3.34	10.04	42.77	52.81	0.00	94.64
21	**Tirunelveli**	6998.99	6982.02	165.96	0.00	165.96	439.39	11.49	629.53	641.02	0.00	1246.37
22	**Tiruvannamalai**	6187.67	6187.67	1.51	0.00	1.51	224.41	33.19	1280.49	1313.68	0.00	1539.60
23	**Vellore**	6056.53	6056.53	0.00	0.00	0.00	19.99	154.74	655.47	810.21	0.00	830.20
24	**Viluppuram**	7211.86	7211.85	12.65	0	12.65	396.32	483.57	1521.25	2004.82	0	2413.79
25	**Virudhunagar**	4487.16	4487.15	0.00	0.00	0.00	246.33	2.78	286.88	289.66	0.00	535.99
	Sub Total	**105203.96**	**79320.14**	**1399.52**	**0.90**	**1400.42**	**3961.53**	**3137.12**	**7365.04**	**10502.17**	**8.17**	**15872.29**
v)	**PUDUCHERY**											
1	PONDICHERRY	301.19	301.19	0.00	0.00	0.00	0.00	86.12	0.00	86.12	0.00	86.12
	Sub Total	**301.19**	**301.19**	**0.00**	**0.00**	**0.00**	**0.00**	**86.12**	**0.00**	**86.12**	**0.00**	**86.12**
	Grand Total	**68564.85**	**23089.10**	**2021.06**	**0.90**	**2021.96**	**4584.01**	**4840.30**	**7505.81**	**12346.12**	**36.41**	**18988.50**

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				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
X	**Basin : Narmada**											
i)	**GUJARAT**											
1	**Bharuch**	5083.67	1849.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Dohad**	3458.35	60.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Narmada**	2719.36	2321.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Panch Mahals**	5095.62	137.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Surat**	4174.64	168.82	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Vadodara**	7234.95	3788.50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**27766.59**	**8326.35**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**											
1	**Alirajpur**	3217.78	3001.03	24.57	0.00	24.57	37.15	8.25	171.50	179.76	94.22	335.69
2	**Anuppur**	3637.40	517.37	0.42	0.00	0.42	0.04	1.94	1.79	3.73	1.84	6.03
3	**Balaghat**	8897.36	2210.54	201.09	0.00	201.09	32.30	6.03	109.89	115.92	23.74	373.05
4	**Barwani**	5234.28	3841.08	41.30	0.00	41.30	12.97	214.66	449.74	664.40	227.77	946.44
5	**Betul**	9690.38	3712.61	122.48	0.00	122.48	37.71	134.67	328.62	463.29	114.71	738.19
6	**Bhopal**	2618.98	3.33	0.12	0.00	0.12	0.05	0.48	0.43	0.91	0.25	1.33
7	**Burhanpur**	3084.12	368.60	0.00	0.00	0.00	1.27	33.34	34.54	67.88	4.25	73.40
8	**Chhindwara**	11361.38	3389.22	45.65	0.00	45.65	25.03	164.09	386.06	550.16	49.84	670.68
9	**Damoh**	7068.37	417.79	13.98	0.00	13.98	5.80	24.04	26.03	50.07	12.57	82.41
10	**Dewas**	6700.19	3740.87	25.87	0.00	25.87	76.58	872.19	652.53	1524.72	112.33	1739.51
11	**Dhar**	7842.30	4756.36	254.00	0.00	254.00	170.29	1002.28	683.74	1686.02	332.48	2442.78
12	**Dindori**	5543.20	4598.04	10.11	0.00	10.11	0.34	0.46	5.39	5.86	12.33	28.64
13	**Khandwa**	7169.74	6469.19	264.57	0.00	264.57	52.80	309.96	977.51	1287.48	212.36	1817.21
14	**Harda**	3192.55	3127.44	965.52	0.00	965.52	0.00	231.44	320.88	552.32	253.08	1770.92
15	**Hoshangabad**	6456.42	6456.42	1504.89	0.00	1504.89	25.19	747.85	665.36	1413.21	164.47	3107.76
16	**Indore**	3765.95	1013.68	6.37	0.00	6.37	10.87	505.88	32.75	538.63	25.04	580.92
17	**Jabalpur**	4911.29	4619.32	198.09	0.00	198.09	8.90	1055.66	359.14	1414.80	194.83	1816.61
18	**Jhabua**	3302.18	7.92	0.37	0.00	0.37	0.28	0.06	0.34	0.40	0.33	1.39
19	**Katni**	4867.17	1093.93	19.47	0.00	19.47	3.13	51.70	79.98	131.68	117.06	271.35
20	**Mandla**	7201.48	6371.63	190.71	0.00	190.71	32.66	0.00	144.17	144.17	66.24	433.78
21	**Narsinghpur**	4947.28	4818.19	86.48	0.00	86.48	0.06	2107.31	360.93	2468.24	187.48	2742.26
22	**Raisen**	8172.10	4494.04	579.60	0.00	579.60	24.16	1105.32	231.91	1337.23	270.04	2211.02
23	**Sagar**	9858.18	371.79	5.04	0.00	5.04	3.84	27.36	62.48	89.84	28.95	127.66
24	**Sehore**	6317.41	3143.66	389.30	0.00	389.30	121.75	469.88	453.54	923.42	180.42	1614.89
25	**Seoni**	8422.70	2153.12	212.63	0.00	212.63	29.36	66.66	131.03	197.69	48.09	487.77
26	**Umaria**	4411.61	0.47	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.04
27	**Khargone**	7757.16	7397.29	618.62	0.00	618.62	24.54	440.19	638.70	1078.88	68.51	1790.54
	Sub Total	**165648.96**	**82094.93**	**5781.25**	**0.00**	**5781.25**	**737.06**	**9581.73**	**7308.99**	**16890.73**	**2803.25**	**26212.28**
iii)	**CHHATISGARH**											
1	**Bilaspur**	8022.86	0.71	0.05	0.00	0.05	0.00	0.02	0.00	0.02	0.00	0.08
2	**Kabirdham**	4061.73	596.41	25.63	0.00	25.63	0.03	77.16	0.38	77.54	3.24	106.44
3	**Rajnandgaon**	7764.54	78.58	4.37	0.00	4.37	0.19	3.78	0.10	3.88	0.13	8.58
	Sub Total	**19849.13**	**675.70**	**30.05**	**0.00**	**30.05**	**0.23**	**80.97**	**0.48**	**81.45**	**3.38**	**115.10**
iv)	**MAHARASHTRA**											
1	**Dhule**	6925.51	7.95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Nandurbar**	5684.20	1572.12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**12609.71**	**1580.07**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**225874.39**	**92677.05**	**5811.30**	**0.00**	**5811.30**	**737.28**	**9662.70**	**7309.47**	**16972.17**	**2806.63**	**26327.38**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XI	**Basin : Tapi**											
i)	**GUJARAT**											
1	**Narmada**	2719.36	398.16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Bharuch**	5083.67	1034.35	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Surat**	4174.64	2654.37	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Tapi**	3040.24	1686.10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**The Dangs**	1700.82	25.75	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**16718.73**	**5798.73**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**											
1	**Harda**	3192.55	65.11	20.10	0.00	20.10	0.00	4.82	6.68	11.50	5.27	36.87
2	**Burhanpur**	3084.12	2715.52	0.00	0.00	0.00	9.36	245.64	254.48	500.12	31.30	540.78
3	**Betul**	9690.38	3848.03	126.95	0.00	126.95	39.08	139.58	340.60	480.19	118.89	765.11
4	**Khandwa**	7169.74	700.55	28.65	0.00	28.65	5.72	33.57	105.86	139.42	23.00	196.79
5	**Khargone**	7757.16	359.87	30.09	0.00	30.09	1.19	21.41	31.07	52.49	3.33	87.11
6	**Barwani**	5234.28	1393.21	14.98	0.00	14.98	4.71	77.86	163.13	240.99	82.61	343.29
	Sub Total	**36128.23**	**9082.29**	**220.78**	**0.00**	**220.78**	**60.06**	**522.88**	**901.81**	**1424.69**	**264.40**	**1969.94**
iii)	**MAHARASHTRA**											
1	**Washim**	5017.05	1056.31	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Nashik**	15021.09	5959.21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Nandurbar**	5684.20	4111.38	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Jalna**	7510.09	123.51	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Jalgaon**	11349.74	11334.09	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Dhule**	6925.51	6864.04	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Buldana**	9409.67	5613.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Aurangabad**	9772.28	1046.84	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Akola**	5214.95	5214.73	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Amravati**	11765.11	7744.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**87669.69**	**49067.70**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**140516.65**	**63948.72**	**220.78**	**0.00**	**220.78**	**60.06**	**522.88**	**901.81**	**1424.69**	**264.40**	**1969.94**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XII	**Basin : West Flowing Rivers from Tapi to Tadri**											
i)	**DADRA & NAGAR HAVELI**											
1	**Dadra and Nagar Haveli**	477.07	477.07	12.48	0.00	12.48	0.00	1.26	10.94	12.20	20.47	45.15
	Sub Total	**477.07**	**477.07**	**12.48**	**0.00**	**12.48**	**0.00**	**1.26**	**10.94**	**12.20**	**20.47**	**45.15**
ii)	**DAMAN & DIU**											
1	**Daman**	70.98	70.98	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**70.98**	**70.98**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
iii)	**GOA**											
1	**North Goa**	1650.18	1650.18	41.64	0.00	41.64	97.10	22.80	10.46	33.26	8.80	180.80
2	**South Goa**	1917.11	1917.11	44.90	0.00	44.90	107.25	26.46	15.94	42.40	10.65	205.20
	Sub Total	**3567.29**	**3567.29**	**86.54**	**0.00**	**86.54**	**204.35**	**49.26**	**26.40**	**75.66**	**19.45**	**386.00**
iv)	**GUJARAT**											
1	**Navsari**	2146.71	2146.71	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Surat**	4174.64	1351.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Tapi**	3040.24	1354.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**The Dangs**	1700.82	1675.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Valsad**	2894.91	2894.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**13957.32**	**9422.26**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
v)	**KARNATAKA**											
1	**Belgaum**	13120.75	1007.02	45.98	0.00	45.98	0.24	107.23	105.40	212.63	67.92	326.76
2	**Dharwad**	4202.26	1422.24	53.40	0.00	53.40	0.00	70.45	0.00	70.45	0.00	123.85
3	**Haveri**	4743.98	120.36	1.30	0.00	1.30	2.46	15.99	0.01	15.99	5.28	25.03
4	**Shimoga**	8361.30	15.01	0.76	0.00	0.76	0.91	0.58	0.11	0.70	0.15	2.52
5	UTTAR KANNAD	10048.65	8350.89	0.00	0.00	0.00	50.03	70.31	86.39	156.69	118.97	325.70
	Sub Total	**40476.94**	**10915.52**	**101.45**	**0.00**	**101.45**	**53.64**	**264.55**	**191.91**	**456.46**	**192.32**	**803.87**
vi)	**MAHARASHTRA**											
1	**Ahmadnagar**	16510.41	12.14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Dhule**	6925.51	53.52	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Kolhapur**	7500.31	262.87	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Mumbai**	144.60	144.60	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Mumbai (Suburban)**	438.28	438.28	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Nandurbar**	5684.20	0.69	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Nashik**	15021.09	2088.62	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Pune**	15185.75	313.94	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Raigarh**	6942.67	6940.14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Ratnagiri**	8050.94	8036.44	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Sangli**	8349.99	3.80	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Satara**	10223.37	36.06	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Sindhudurg**	4966.78	4842.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
14	**Thane**	9208.22	9202.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**115152.12**	**32375.79**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grand Total	**173701.72**	**56828.91**	**200.47**	**0.00**	**200.47**	**257.99**	**315.07**	**229.25**	**544.32**	**232.24**	**1235.02**

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(Area in Sq.Km)

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				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XIII	**Basin : West Flowing Rivers from Tadri to Kanyakumari**											
i)	**KARNATAKA**											
1	**Chikmagalur**	7167.73	152.22	1.32	0.00	1.32	1.36	5.56	0.04	5.60	2.91	11.18
2	**Dakshin Kannad**	4578.68	4577.59	0.00	0.00	0.00	0.00	165.85	420.16	586.01	203.49	789.50
3	**Hassan**	6789.18	462.78	24.61	0.00	24.61	13.84	15.95	0.34	16.29	2.47	57.21
4	**Kodagu**	4115.60	1216.92	3.63	0.00	3.63	0.27	0.31	0.00	0.31	0.39	4.60
5	**Shimoga**	8361.30	2652.20	134.82	0.00	134.82	161.62	102.60	20.30	122.91	26.54	445.88
6	**Udupi**	3841.79	3838.73	0.00	0.00	0.00	4.53	6.98	237.85	244.83	60.61	309.97
7	**Uttar kannad**	10048.65	1033.70	0.00	0.00	0.00	6.19	8.70	10.69	19.40	14.73	40.32
	Sub Total	**44902.93**	**13934.14**	**164.37**	**0.00**	**164.37**	**187.80**	**305.96**	**689.38**	**995.34**	**311.15**	**1658.66**
ii)	**KERALA**											
1	**Alappuzha**	1454.48	1454.48	62.37	0.01	62.38	4.62	77.28	8.19	85.47	251.57	404.04
2	**Ernakulam**	2454.58	2454.57	73.40	0.06	73.46	20.02	4.65	69.70	74.35	50.82	218.65
3	**Idukki**	5106.26	4682.42	11.13	0.10	11.23	152.76	38.06	76.49	114.54	102.21	380.75
4	**Kannur**	2957.80	2956.64	6.31	2.81	9.12	14.36	4.38	92.36	96.74	31.87	152.09
5	**Kasaragod**	1964.67	1964.67	5.30	0.19	5.49	121.84	102.69	281.23	383.92	35.88	547.13
6	**Kollam**	2556.16	2544.48	13.62	0.27	13.89	0.64	0.33	28.71	29.04	16.70	60.26
7	**Kottayam**	2258.83	2258.83	0.15	0.13	0.28	2.76	0.18	19.52	19.70	123.21	145.95
8	**Kozhikode**	2347.84	2343.42	9.87	0.08	9.95	5.12	0.56	23.60	24.15	7.40	46.62
9	**Malappuram**	3599.11	3597.21	24.42	3.78	28.20	44.87	13.61	160.80	174.41	54.41	301.88
10	**Palakkad**	4542.91	3923.85	366.59	0.22	366.81	50.69	75.50	112.89	188.39	147.74	753.63
11	**Pathanamthitta**	2709.55	2704.62	27.46	0.00	27.46	0.34	0.04	23.39	23.43	1.21	52.43
12	**Thiruvananthapuram**	2246.81	2242.48	38.26	0.00	38.26	6.08	1.11	32.49	33.60	4.38	82.31
13	**Thrissur**	3071.57	3071.56	190.23	0.05	190.28	37.91	17.16	380.07	397.23	87.91	713.33
14	**Wayanad**	2141.18	205.04	0.00	0.00	0.00	0.07	0.00	0.07	0.07	11.84	11.97
	Sub Total	**39411.75**	**36404.27**	**829.10**	**7.69**	**836.80**	**462.08**	**335.54**	**1309.49**	**1645.03**	**927.14**	**3871.05**
iii)	**TAMIL NADU**											
1	**Coimbatore**	4708.71	2139.34	85.97	0.00	85.97	0.00	143.78	297.12	440.91	0.00	526.87
2	**Kanniyakumari**	1746.80	1675.98	83.89	0.00	83.89	111.73	39.26	36.35	75.61	0.00	271.23
3	**The Nilgiris**	2572.79	359.39	0.00	0.00	0.00	0.00	0.00	1.67	1.67	0.00	1.67
4	**Theni**	2909.55	1.95	0.07	0.00	0.07	0.01	0.07	0.29	0.36	0.00	0.43
5	**Tirunelveli**	6998.99	16.96	0.40	0.00	0.40	1.07	0.03	1.53	1.56	0.00	3.03
6	**Tiruppur**	5266.55	283.22	14.42	0.11	14.53	1.12	8.53	39.83	48.35	0.00	64.00
7	**Virudhunagar**	4487.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub Total	**28690.55**	**4476.84**	**184.74**	**0.11**	**184.85**	**113.93**	**191.67**	**376.79**	**568.46**	**0.00**	**867.24**
iv)	**PONDICHERY**											
1	**Mahe**	9.90	9.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30
	Sub Total	**9.90**	**9.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.30**	**0.30**
	Grand Total	**113015.13**	**54825.15**	**1178.21**	**7.81**	**1186.01**	**763.80**	**833.17**	**2375.66**	**3208.84**	**1238.59**	**6397.24**

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Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XIV	**Basin : Mahi**											
i)	**GUJARAT**											
1	**Anand**	2806.43	996.53	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Bharuch**	5083.67	2199.42	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Dohad**	3458.35	3397.99	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Kheda**	3843.53	518.13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Panch Mahals**	5095.62	4889.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Sabar Kantha**	7140.29	26.43	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Vadodara**	7234.95	3446.45	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**34662.84**	**15474.34**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**MADHYA PRADESH**											
1	**Alirajpur**	3217.78	216.75	1.77	0.00	1.77	2.68	0.60	12.39	12.98	6.80	24.24
2	**Dhar**	7842.30	1505.16	80.38	0.00	80.38	53.89	317.17	216.37	533.54	105.21	773.02
3	**Jhabua**	3302.18	3294.25	154.92	0.00	154.92	116.73	25.53	141.29	166.82	138.66	577.12
4	**Neemuch**	4001.43	29.18	0.56	0.00	0.56	0.13	2.19	5.86	8.05	0.23	8.98
5	**Ratlam**	4639.98	1820.86	23.72	0.00	23.72	15.91	329.82	332.84	662.67	87.64	789.93
	Sub Total	**23003.67**	**6866.20**	**261.34**	**0.00**	**261.34**	**189.34**	**675.32**	**708.75**	**1384.06**	**338.54**	**2173.29**
iii)	**RAJASTHAN**											
1	**Banswara**	4332.72	4332.72	639.22	0.00	639.22	44.03	36.46	152.01	188.47	202.08	1073.80
2	**Chittorgarh**	7500.49	133.03	1.92	0.00	1.92	0.11	20.06	18.90	38.97	0.30	41.29
3	**Dungarpur**	3640.43	3042.56	66.54	0.00	66.54	19.92	49.11	224.91	274.02	18.72	379.19
4	**Pratapgarh**	4141.45	2993.52	64.89	0.00	64.89	2.65	169.65	519.14	688.78	42.44	798.76
5	**Udaipur**	11459.12	5494.69	19.44	0.00	19.44	53.59	61.50	336.08	397.58	1.98	472.58
	Sub Total	**31074.21**	**15996.52**	**792.00**	**0.00**	**792.00**	**120.30**	**336.78**	**1251.03**	**1587.81**	**265.52**	**2765.62**
	Grand Total	**88740.72**	**38337.06**	**1053.34**	**0.00**	**1053.34**	**309.64**	**1012.09**	**1959.78**	**2971.87**	**604.06**	**4938.92**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XV	**Basin: Sabarmati**											
i)	**GUJARAT**											
1	**Ahmedabad**	7712.66	4718.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Anand**	2806.43	1785.66	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Banaskantha**	10247.55	506.28	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Bhavnagar**	8062.74	213.25	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Gandhinagar**	2055.07	2055.07	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Kheda**	3843.53	3325.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Mahesana**	4244.35	2087.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Panchmahal**	5095.62	68.67	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Rajkot**	10762.12	261.22	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Sabarkantha**	7140.29	7113.86	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Surendranagar**	10116.24	4603.36	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**72086.60**	**26738.20**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**RAJASTHAN**											
1	**Dungarpur**	3640.43	597.87	13.07	0.00	13.07	3.91	9.65	44.19	53.84	3.68	74.51
2	**Sirohi**	4961.34	54.66	0.51	0.00	0.51	0.33	0.84	8.70	9.54	0.00	10.38
3	**Udaipur**	11459.12	3289.85	11.64	0.00	11.64	32.09	36.82	201.22	238.04	1.18	282.95
	Sub Total	**20060.89**	**3942.38**	**25.23**	**0.00**	**25.23**	**36.32**	**47.31**	**254.12**	**301.43**	**4.86**	**367.84**
	Grant Total	**92147.49**	**30680.58**	**25.23**	**0.00**	**25.23**	**36.32**	**47.31**	**254.12**	**301.43**	**4.86**	**367.84**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 16 : Net Area Irrigated (Source Wise) by River Basin, State & Dist. for the Year Ending 2015-16

(Area in Sq.Km)

Sl. No.	Basin/State/District Name	Total Area	District Area in Basin	Canals		Total Canals	Tanks	Wells		Total Wells	Other Sources	Grand Total
				Government	Private			Tubewells	Other wells			
1	2	3	4	5	6	7	8	9	10	11	12	13
XVI	**Basin : WFR of Kutch, Saurashtra Including Luni**											
i)	**GUJARAT**											
1	**Ahmadabad**	7712.66	2994.60	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	**Amreli**	7100.01	7100.01	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3	**Anand**	2806.43	24.24	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4	**Banas Kantha**	10247.55	9741.27	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	**Bhavnagar**	8062.74	7849.49	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	**Jamnagar**	10490.91	10490.91	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7	**Junagadh**	8497.29	8497.29	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	**Kachchh**	40508.20	40508.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	**Mahesana**	4244.35	2156.99	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	**Patan**	5431.61	5431.61	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	**Porbandar**	2203.38	2203.38	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	**Rajkot**	10762.12	10500.90	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	**Surendranagar**	10116.24	5512.88	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**128183.49**	**113011.77**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
ii)	**RAJASTHAN**											
1	**Ajmer**	8206.23	1870.76	9.22	0.00	9.22	13.73	14.50	213.74	228.24	28.97	280.16
2	**Barmer**	27351.28	20773.88	171.99	0.00	171.99	0.00	558.55	1137.62	1696.17	0.83	1868.98
3	**Bhilwara**	10052.59	2.23	0.02	0.00	0.02	0.01	0.04	0.33	0.37	0.00	0.40
4	**Chittorgarh**	7500.49	36.42	0.52	0.00	0.52	0.03	5.49	5.18	10.67	0.08	11.31
5	**Jaisalmer**	37070.06	2021.38	24.98	0.00	24.98	0.00	39.92	0.58	40.50	0.01	65.49
6	**Jalore**	10322.33	10322.33	932.42	0.00	932.42	0.00	1599.03	948.26	2547.29	0.00	3479.71
7	**Jodhpur**	22037.60	13324.02	8.81	0.00	8.81	0.00	2607.95	20.13	2628.07	7.13	2644.02
8	**Nagaur**	17026.59	6096.23	0.00	0.00	0.00	0.00	706.49	271.94	978.43	0.17	978.60
9	**Pali**	11890.23	11890.23	174.51	0.00	174.51	218.90	264.09	967.36	1231.45	2.00	1626.86
10	**Rajsamand**	4485.42	364.89	0.27	0.00	0.27	1.44	0.98	27.09	28.07	0.00	29.78
11	**Sikar**	7428.38	2.75	0.00	0.00	0.00	0.00	0.80	0.08	0.87	0.00	0.87
12	**Sirohi**	4961.34	4906.68	45.96	0.00	45.96	29.20	75.19	781.21	856.40	0.00	931.56
13	**Udaipur**	11459.12	205.67	0.73	0.00	0.73	2.01	2.30	12.58	14.88	0.07	17.69
	Sub Total	**179791.66**	**71817.47**	**1369.43**	**0.00**	**1369.43**	**265.31**	**5875.33**	**4386.09**	**10261.42**	**39.28**	**11935.44**
iii)	**Daman& Diu**											
1	**Diu**	34.39	34.39	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Sub Total	**34.39**	**34.39**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
	Grant Total	**308009.54**	**184863.63**	**1369.43**	**0.00**	**1369.43**	**265.31**	**5875.33**	**4386.09**	**10261.42**	**39.28**	**11935.44**

Sources : India-WRIS (col. 2 to 4), Directorate of Economics & Statistics, Ministry of Agriculture (col 5 to 12) (Data received from respective websites)

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
I	**Mahanadi basin**												
i)	**Chhattisgarh**	**443027.68**	**122627.79**	**37473.55**	**135763.89**	**738892.90**	**672864.77**	**315437.79**	**57299.81**	**372737.59**	**49131.18**	**303776.53**	55%
1	Balod	17145.18	7707.63	0.00	9929.12	34781.93	32073.42	18551.29	2233.92	20785.20	1724.34	11597.13	65%
2	Baloda Bazar	35270.94	15185.95	3199.33	6853.85	60510.07	54459.05	17672.41	3493.27	21165.68	4592.84	32183.26	39%
3	Bemetara	16646.26	12525.56	0.00	13977.93	43149.75	38834.78	28286.77	2028.02	30314.79	2384.71	8118.71	78%
4	Bilaspur	24828.52	7107.98	3923.32	6829.01	42688.83	39050.54	16460.01	5708.48	22168.50	4205.00	17861.76	57%
5	Dhamtari	22001.34	9711.30	0.00	11616.90	43329.54	38996.58	22839.96	2035.79	24875.75	2087.32	13979.57	64%
6	Durg	13509.67	8420.75	0.00	9118.98	31049.40	27944.45	17603.39	5465.05	23068.44	1201.16	8212.95	83%
7	Gariaband	23537.86	5157.24	0.00	5176.90	33872.00	31356.62	14842.44	1492.80	16335.24	1659.21	14851.91	52%
8	Janjgir-Champa	20152.44	12117.48	3009.13	8242.38	43521.43	39737.13	14528.66	4395.31	18923.96	4565.01	20418.97	48%
9	Jashpur	21179.06	1442.41	3496.26	2734.50	28852.22	25981.62	8646.15	1593.86	10240.01	1703.32	15591.92	39%
10	Kanker	18529.93	1254.89	2423.42	4583.10	26791.34	24432.05	11400.83	920.32	12321.15	959.44	12070.52	50%
11	Kawardha	27604.74	3835.74	3450.31	6950.40	41841.20	38311.09	23411.85	2066.47	25478.32	2385.87	12467.59	67%
12	Kondagaon	2186.24	56.50	373.19	184.23	2800.17	2547.93	974.77	101.93	1076.71	111.75	1460.82	42%
13	Korba	31115.38	922.17	4089.86	2007.87	38135.27	34979.22	8159.70	4378.94	12538.63	3345.85	22287.94	36%
14	Koriya	11118.40	2322.16	1075.01	1314.89	15830.46	14697.07	4493.75	1046.39	5540.14	1041.75	9141.10	38%
15	Mahasamund	46426.76	6775.73	1267.56	11414.38	65884.43	60213.58	33144.40	2720.43	35864.83	2895.66	24140.31	60%
16	Mungeli	10758.66	2915.41	0.00	3051.77	16725.84	15126.26	6591.78	1928.52	8520.30	1717.31	6815.73	56%
17	Raigarh	31007.68	3601.55	5198.26	4941.12	44748.61	41166.73	16093.58	4198.77	20292.35	4272.23	20374.05	49%
18	Raipur	20050.78	10717.93	626.47	11424.75	42819.93	38711.35	17410.21	6839.51	24249.72	2975.97	17692.91	63%
19	Rajnandgaon	29289.17	9800.61	3426.30	13018.07	55534.15	50586.95	28083.11	3649.98	31733.09	4167.16	18229.15	63%
20	Surajpur	6244.08	578.98	474.47	1307.72	8605.24	7943.10	2564.31	388.93	2953.24	448.69	4929.97	37%
21	Surguja	14424.59	469.82	1440.65	1086.03	17421.10	15715.27	3678.41	613.12	4291.53	686.57	11350.25	27%
ii)	**Jharkhand**	**1095.14**	**5.17**	**125.88**	**19.31**	**1245.50**	**1120.95**	**91.73**	**59.02**	**150.75**	**59.02**	**970.20**	13%
1	Simdega	1095.14	5.17	125.88	19.31	1245.50	1120.95	91.73	59.02	150.75	59.02	970.20	13%
iii)	**MADHYA PRADESH**	**1627.13**	**3.44**	**289.38**	**8.39**	**1928.33**	**1830.59**	**41.11**	**66.20**	**107.31**	**63.62**	**1715.92**	6%
1	Anuppur	1392.11	2.47	259.17	5.77	1659.52	1576.59	28.15	55.25	83.40	50.58	1489.57	5%
2	Balaghat	5.60	0.24	0.59	0.17	6.60	6.27	0.70	0.26	0.96	0.30	5.24	15%
3	Dindori	215.30	0.65	27.61	2.19	245.75	232.52	10.98	10.33	21.31	12.34	207.65	9%
4	Mandla	14.12	0.07	2.01	0.26	16.46	15.21	1.29	0.35	1.64	0.41	13.46	11%
iv)	**Maharashtra**	**2065.63**	**17.43**	**0.15**	**157.50**	**2240.71**	**2124.87**	**362.45**	**76.51**	**438.97**	**87.55**	**1675.41**	21%
1	Gadchiroli	1874.77	5.86	0.00	143.98	2024.61	1922.99	344.32	66.06	410.37	75.93	1502.74	21%
2	Gondia	190.86	11.57	0.15	13.52	216.10	201.88	18.14	10.46	28.59	11.62	172.67	14%
v)	**Odisha**	**477061.69**	**108553.23**	**44650.86**	**114767.38**	**745033.15**	**694657.71**	**237522.53**	**59616.04**	**297138.57**	**0.00**	**0.00**	43%
1	Angul	11900.58	1201.02	1316.11	1240.02	15657.73	14811.33	4645.35	1289.99	5935.34	0.00	0.00	40%
2	Bargarh	41040.64	12215.16	136.38	11941.23	65333.41	62065.07	25229.32	4659.88	29889.20	0.00	0.00	48%
3	Bolangir	46705.54	5498.65	898.73	6580.74	59683.66	56090.63	19884.28	5165.10	25049.38	0.00	0.00	45%
4	Boudh	15719.95	3213.73	446.28	4048.53	23428.49	22093.26	8556.26	1323.47	9879.73	0.00	0.00	45%
5	Cuttack	43143.51	10001.44	8659.60	7588.07	69392.62	64912.27	20121.23	7583.30	27704.53	0.00	0.00	43%
6	Deogarh	1800.41	243.71	123.27	149.62	2317.00	2085.60	661.56	72.82	734.37	0.00	0.00	35%
7	Dhenkanal	4655.45	738.17	986.26	514.81	6894.69	6486.14	2480.81	830.45	3311.27	0.00	0.00	51%
8	Ganjam	2322.63	732.97	1066.20	520.55	4642.35	4375.30	1463.10	634.57	2097.67	0.00	0.00	48%
9	Jagatsinghpur	17373.41	12927.64	4341.39	11009.71	45652.14	41750.73	21111.94	2786.21	23898.15	0.00	0.00	57%
10	Jajpur	285.91	138.94	56.23	56.45	537.53	502.93	235.77	52.06	287.83	0.00	0.00	57%
11	Jharsuguda	17492.03	1543.19	221.66	1977.96	21234.84	20007.06	5616.27	3040.07	8656.34	0.00	0.00	43%
12	Kalahandi	44622.75	10246.19	1501.41	9333.47	65703.83	61252.95	16965.42	4995.98	21961.41	0.00	0.00	36%
13	Kandhamal	22205.34	2646.35	3323.09	3271.73	31446.51	29000.08	5868.53	1898.32	7766.86	0.00	0.00	27%
14	Kendrapara	5248.76	4149.15	1403.49	3648.80	14450.20	13246.76	7657.42	988.42	8645.84	0.00	0.00	65%
15	Khurda	23997.75	7705.64	5686.12	8303.18	45692.69	42181.07	14748.73	6384.75	21133.48	0.00	0.00	50%
16	Nabarangapur	12986.35	845.78	1196.55	1082.49	16111.18	15261.56	3369.52	967.76	4337.28	0.00	0.00	28%
17	Nayagarh	19130.85	3500.50	4138.23	4647.02	31416.60	28964.47	8794.36	2530.22	11324.58	0.00	0.00	39%
18	Nuapada	22582.22	4454.10	706.77	4115.25	31858.34	30246.06	14266.04	1622.35	15888.39	0.00	0.00	53%
19	Puri	30265.66	11897.61	7358.42	16805.51	66327.19	61101.85	25023.42	4682.94	29706.36	0.00	0.00	49%
20	Rayagada	563.11	18.22	68.41	31.69	681.44	613.32	94.69	93.29	187.98	0.00	0.00	31%
21	Sambalpur	41138.87	6398.39	189.03	10132.92	57859.20	53658.01	11141.44	3684.75	14826.19	0.00	0.00	28%
22	Subarnapur	19918.53	3809.21	155.57	4316.71	28200.02	26470.15	9548.80	1834.70	11383.50	0.00	0.00	43%
23	Sundargarh	31961.45	4427.46	671.67	3450.92	40511.49	37481.12	10038.25	2494.62	12532.87	0.00	0.00	33%
	Mahanadi basin Total	**924877.26**	**231207.05**	**82539.82**	**250716.47**	**1489340.60**	**1372598.89**	**553455.61**	**117117.58**	**670573.18**	**49341.37**	**308138.05**	49%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
II	**Subarnarekha Basin**												
i)	**Jharkhand**	**71196.86**	**1270.27**	**6217.11**	**5034.88**	**83719.12**	**76249.84**	**8462.72**	**9443.09**	**17905.80**	**7928.46**	**58343.82**	23%
1	Bokaro	94.86	1.22	1.56	4.85	102.48	92.23	15.57	9.18	24.75	9.04	67.48	27%
2	East Singhbhum	20725.62	217.62	2248.95	863.59	24055.78	21817.98	1144.57	3107.80	4252.37	2564.11	17565.55	19%
3	Khunti	6336.86	63.48	366.23	248.88	7015.44	6354.35	766.80	359.61	1126.40	359.63	5227.93	18%
4	Ramgarh	823.09	10.80	49.54	41.37	924.81	832.33	201.77	118.42	320.19	115.55	512.14	38%
5	Ranchi	17292.72	395.19	1205.94	1566.70	20460.56	18890.99	4794.13	2679.86	7473.99	1918.30	11416.95	40%
6	Saraikela - Kharsawa	12247.73	361.50	965.67	1436.26	15011.16	13510.06	736.85	1928.31	2665.15	1731.85	10844.85	20%
7	West Singhbhum	13675.98	220.46	1379.22	873.23	16148.90	14751.92	803.04	1239.92	2042.95	1229.98	12708.92	14%
ii)	**Odisha**	**108478.76**	**26045.16**	**24587.92**	**35417.87**	**194529.71**	**181194.45**	**81437.41**	**11728.31**	**93165.72**	**0.00**	**0.00**	51%
1	Balasore	43498.72	7758.69	11038.55	14891.64	77187.60	71353.37	41388.52	5081.62	46470.14	0.00	0.00	65%
2	Mayurbhanj	64980.04	18286.47	13549.37	20526.23	117342.11	109841.08	40048.90	6646.69	46695.58	0.00	0.00	43%
iii)	**WEST BENGAL**	**68527.48**	**4084.50**	**19198.43**	**9708.03**	**101518.46**	**91947.92**	**23050.16**	**2007.97**	**25058.13**	**0.00**	**0.00**	27%
1	Paschim medinipur	61583.84	3233.38	17637.09	9008.93	91463.26	82898.24	21818.85	1374.90	23193.74	0.00	0.00	28%
2	Purba medinipur	983.85	37.46	282.25	147.50	1451.06	1305.95	527.68	43.24	570.92	0.00	0.00	44%
3	Puruliya	5959.79	813.66	1279.09	551.60	8604.14	7743.73	703.64	589.83	1293.47	0.00	0.00	17%
	Subarnarekha Basin Total	**248203.10**	**31399.93**	**50003.46**	**50160.78**	**379767.29**	**349392.21**	**112950.29**	**23179.37**	**136129.65**	**7928.46**	**58343.82**	39%
Source: Central Ground Water Board, Faridabad													
III	**Brahmani & Baitarani basin**												
i)	**Chhattisgarh**	**6800.04**	**289.24**	**1129.93**	**802.35**	**9021.56**	**8291.20**	**3004.19**	**407.19**	**3411.39**	**447.69**	**4839.32**	41%
1	Balrampur	1187.60	34.35	133.85	54.94	1410.73	1269.66	244.03	34.04	278.07	38.24	987.38	22%
2	Jashpur	5612.45	254.89	996.08	747.41	7610.83	7021.54	2760.16	373.15	3133.32	409.44	3851.93	45%
ii)	**Jharkhand**	**112314.31**	**842.21**	**11122.07**	**3312.38**	**127590.97**	**116255.94**	**10620.48**	**5913.52**	**16534.01**	**5717.92**	**99721.72**	14%
1	Gumla	37006.20	212.95	4022.40	837.14	42078.69	38099.55	3038.51	1488.48	4526.98	1481.49	33572.52	12%
2	Khunti	6640.06	105.70	631.51	415.87	7793.15	7185.82	1498.20	506.97	2005.17	500.11	5180.62	28%
3	Latehar	86.38	1.66	12.84	6.48	107.35	96.62	12.51	4.17	16.67	4.10	79.95	17%
4	Lohardaga	12136.54	126.06	1394.61	497.92	14155.13	12955.12	1480.37	537.26	2017.62	537.29	10937.46	16%
5	Ranchi	13576.21	128.36	869.72	507.84	15082.14	13663.42	2151.17	1020.98	3172.14	898.94	10491.25	23%
6	Simdega	28439.91	97.27	2439.21	376.63	31353.01	28867.63	1715.27	868.57	2583.84	868.63	26283.73	9%
7	West Singhbhum	14429.01	170.22	1751.77	670.50	17021.51	15387.79	724.46	1487.11	2211.57	1427.35	13176.18	14%
iii)	**Odisha**	**284917.61**	**59195.52**	**44867.13**	**57854.00**	**446834.26**	**415806.19**	**157644.11**	**30674.51**	**188318.62**	**0.00**	**0.00**	45%
1	Angul	29017.48	6815.16	2646.22	3828.58	42307.44	39889.77	15197.20	3692.48	18889.68	0.00	0.00	47%
2	Balasore	20343.46	6199.94	6071.50	10294.79	42909.69	40071.83	19070.39	1646.03	20716.42	0.00	0.00	52%
3	Bhadrak	17577.53	11087.14	4308.39	15763.32	48736.38	44623.48	24476.62	2856.88	27333.50	0.00	0.00	61%
4	Cuttack	2189.56	663.00	389.48	344.22	3586.26	3314.83	773.45	361.83	1135.28	0.00	0.00	34%
5	Deogarh	20835.06	4082.01	1100.42	2760.96	28778.46	26715.71	12639.37	949.40	13588.78	0.00	0.00	51%
6	Dhenkanal	25019.24	7441.31	4455.80	2479.57	39395.93	36476.23	9785.72	2971.78	12757.50	0.00	0.00	35%
7	Jajpur	32973.45	9230.40	7194.69	6118.24	55516.77	51798.57	26812.14	4771.62	31583.76	0.00	0.00	61%
8	Kendrapara	1191.59	735.78	328.15	772.02	3027.54	2742.55	1545.41	247.15	1792.56	0.00	0.00	65%
9	Keonjhar	63236.55	6628.07	11512.66	8773.49	90150.77	83867.90	27433.48	6075.21	33508.69	0.00	0.00	40%
10	Mayurbhanj	23572.98	2147.48	4841.71	3119.18	33681.35	31711.04	6874.26	1427.22	8301.49	0.00	0.00	26%
11	Sambalpur	6681.62	560.56	122.15	491.72	7856.04	7143.59	1032.47	222.23	1254.69	0.00	0.00	18%
12	Sundargarh	42279.10	3604.69	1895.96	3107.91	50887.65	47450.69	12003.60	5452.68	17456.28	0.00	0.00	37%
	Brahmani & Baitarani basin Total	**404031.96**	**60326.98**	**57119.13**	**61968.73**	**583446.80**	**540353.34**	**171268.79**	**36995.22**	**208264.01**	**6165.61**	**104561.03**	39%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
IV	**Godavari basin**												
i)	**Andhra Pradesh**	**90079.04**	**62881.32**	**2910.27**	**44189.00**	**200056.70**	**190052.25**	**34875.12**	**6781.13**	**41660.68**	**4065.41**	**150591.46**	22%
1	East Godavari	59682.17	46863.00	1998.16	27187.54	135733.96	128945.04	22108.38	5469.60	27581.08	1954.83	103761.42	21%
2	Visakhapatnam	9115.75	107.43	910.88	106.10	10235.61	9725.29	85.76	656.32	742.60	656.32	8987.91	8%
3	Vizianagaram	0.83	0.03	0.09	0.03	0.98	0.93	0.10	0.01	0.11	0.10	0.80	12%
4	West Godavari	21280.29	15910.86	1.14	16895.34	54086.15	51380.99	12680.88	655.20	13336.90	1454.16	37841.33	26%
ii)	**Chhattisgarh**	**201836.96**	**5451.79**	**24954.10**	**11498.11**	**243740.95**	**224304.00**	**34232.99**	**7267.02**	**41499.99**	**8279.41**	**181746.03**	19%
1	Balod	33.66	9.44	0.00	9.59	52.69	47.44	19.74	4.59	24.33	4.67	22.93	51%
2	Bastar	25306.64	725.98	4795.70	1639.88	32468.20	29627.96	5618.19	2109.49	7727.67	2101.45	21867.65	26%
3	Bijapur	34518.65	188.02	4178.56	562.23	39447.46	35502.72	1874.06	620.64	2494.69	726.23	32901.57	7%
4	Dantewara	17276.60	139.37	2803.05	931.39	21150.41	19921.14	2138.22	707.44	2845.66	772.08	17010.53	14%
5	Dhamtari	18.60	8.70	0.00	9.01	36.31	32.68	14.83	2.85	17.68	3.07	14.77	54%
6	Kanker	36136.21	1241.63	4213.14	3273.05	44864.03	41868.62	8517.92	930.85	9448.77	1056.13	32292.38	23%
7	Kondagaon	25652.56	680.84	4281.31	1996.12	32610.82	30035.29	10263.36	1326.70	11590.05	1585.60	18184.94	39%
8	Narayanpur	22556.28	264.34	3730.18	483.08	27033.88	25254.19	643.20	350.48	993.68	590.91	24020.08	4%
9	Rajnandgaon	9106.67	1872.05	952.16	2160.19	14091.07	12889.77	4253.18	626.65	4879.83	820.87	7815.69	38%
10	Sukma	31231.09	321.43	0.00	433.56	31986.08	29124.19	890.29	587.34	1477.63	618.40	27615.50	5%
iii)	**KARNATAKA**	**25227.21**	**1931.64**	**3155.11**	**3346.50**	**33660.46**	**31636.34**	**12784.51**	**700.44**	**13484.96**	**760.92**	**20115.02**	43%
1	Bidar	25226.60	1931.61	3154.94	3346.43	33659.57	31635.53	12784.32	700.37	13484.70	760.84	20114.39	43%
2	Kalburagi	0.61	0.04	0.18	0.07	0.89	0.81	0.18	0.07	0.25	0.08	0.63	31%
iv)	**MADHYA PRADESH**	**224414.45**	**11131.95**	**24368.28**	**28595.38**	**288510.06**	**272686.78**	**111884.65**	**9648.60**	**121533.25**	**10682.44**	**148672.41**	45%
1	Balaghat	66209.82	3908.87	6616.61	2633.22	79368.53	75054.38	11567.66	3154.55	14722.21	3557.65	59455.89	20%
2	Betul	29832.42	2008.05	4075.47	8130.99	44046.94	41702.87	25538.35	681.22	26219.57	839.98	15222.36	63%
3	Chhindwara	73836.43	3560.50	9542.65	11666.97	98606.55	93484.46	53176.46	3216.48	56392.94	3479.72	36345.81	60%
4	Mandla	3676.46	189.26	623.25	1146.22	5635.19	4820.85	809.68	293.20	1102.88	341.09	3626.10	23%
5	Seoni	50859.32	1465.26	3510.29	5017.98	60852.86	57624.22	20792.49	2303.16	23095.65	2464.01	34022.24	40%
v)	**Maharashtra**	**1150482.63**	**122100.13**	**33593.65**	**382799.49**	**1688975.93**	**1597350.13**	**729362.50**	**71650.05**	**801012.60**	**129439.87**	**754248.10**	50%
1	Ahmednagar	56099.09	9252.49	8355.58	34540.55	108247.73	102509.40	85380.61	4138.26	89518.87	4549.31	20014.23	87%
2	Akola	7.55	0.33	0.01	1.71	9.61	9.10	5.66	0.43	6.09	0.49	2.89	67%
3	Amravati	30015.28	3040.53	812.27	14478.39	48346.47	45419.93	43137.19	1459.32	44596.50	1554.92	7814.15	98%
4	Aurangabad	58484.09	6146.44	298.14	27532.54	92461.20	87809.32	61736.34	3196.18	64932.52	13000.53	13057.08	74%
5	Beed	67650.41	6655.66	5175.74	29002.42	108484.25	103053.27	58010.60	3422.53	61433.14	10845.98	34160.98	60%
6	Bhandara	31142.09	45350.24	417.80	15413.63	92323.76	85539.64	20990.97	3521.29	24512.28	3817.34	60731.30	29%
7	Buldhana	27372.79	2347.95	90.79	8151.21	37962.73	35779.29	24560.63	1319.92	25880.55	1637.87	9624.22	72%
8	Chandrapur	97204.66	4834.16	1471.94	10306.92	113817.72	107908.83	10637.00	10228.01	20865.00	11247.56	86024.25	19%
9	Gadchiroli	92264.03	2035.00	0.00	10245.58	104544.60	98675.97	18832.89	3577.42	22410.34	4111.86	75731.22	23%
10	Gondia	42693.26	6608.18	645.41	15766.43	65713.27	61802.90	9380.40	5974.65	15355.05	6526.57	45895.36	25%
11	Hingoli	46490.02	1492.73	1340.56	28431.41	77754.73	73816.85	37052.52	2163.03	39215.54	7408.27	29356.05	53%
12	Jalgaon	111.48	25.71	3.18	82.39	222.75	211.62	155.04	6.17	161.21	23.93	31.76	76%
13	Jalna	57155.83	2513.39	115.37	24856.08	84640.64	80029.82	42309.96	1356.45	43666.43	3912.03	33807.31	55%
14	Latur	45698.84	6924.99	0.00	16199.85	68823.68	65372.61	34248.03	2140.99	36389.00	4124.11	27003.71	56%
15	Nagpur	66817.63	6221.47	2587.51	19142.98	94769.63	89604.53	35642.88	10318.95	45961.84	10528.31	43433.33	51%
16	Nanded	98215.33	843.03	3504.27	17403.09	119965.72	113963.17	34916.93	3270.07	38187.02	9328.19	69718.04	34%
17	Nashik	64015.63	7632.69	0.00	30612.96	102261.28	96439.21	61660.74	1714.67	63375.43	3779.38	32587.03	66%
18	Osmanabad	23768.90	2643.43	1068.83	6925.26	34406.40	32686.09	22215.82	980.42	23196.24	2712.15	7760.41	71%
19	Parbhani	56000.04	1487.22	645.42	25891.57	84024.25	79714.11	35761.68	1984.28	37745.95	9619.29	34333.16	47%
20	Pune	545.24	113.57	2.89	383.50	1045.20	983.84	835.29	34.26	869.54	38.15	138.03	88%
21	Thane	5.20	0.11	0.00	0.96	6.27	5.87	0.42	0.19	0.61	0.38	4.96	10%
22	Wardha	60064.37	1128.37	1229.63	21008.26	83430.63	79068.08	39911.98	3472.73	43384.70	3698.33	35457.78	55%
23	Washim	33666.65	2126.13	34.75	10017.85	45845.37	43394.69	23866.98	1617.29	25484.27	1956.36	17393.84	59%
24	Yawatmal	94994.20	2676.32	5793.54	16403.96	119868.02	113552.00	28111.93	5752.54	33864.47	15018.55	70167.01	30%

Cont….

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
IV	**Godavari basin**												
vi)	**Odisha**	**104708.60**	**8152.40**	**8506.55**	**11033.96**	**132401.50**	**122808.53**	**18022.24**	**9273.71**	**27295.95**	**0.00**	**0.00**	22%
1	Kalahandi	1388.06	38.57	129.94	29.14	1585.71	1426.89	121.54	99.34	220.88	0.00	0.00	15%
2	Koraput	37383.67	2750.33	3620.16	4553.79	48307.95	44796.30	5433.98	4359.26	9793.24	0.00	0.00	22%
3	Malkangiri	24116.19	3376.97	1152.11	3868.62	32513.89	30221.57	2986.82	1862.76	4849.58	0.00	0.00	16%
4	Nabarangapur	33677.56	1758.66	2617.51	2179.01	40232.74	37579.16	8289.11	2343.82	10632.94	0.00	0.00	28%
5	Nayagarh	4654.99	182.12	710.00	335.68	5882.79	5294.27	1041.87	250.99	1292.86	0.00	0.00	24%
6	Rayagada	3488.13	45.76	276.82	67.71	3878.43	3490.34	148.91	357.54	506.45	0.00	0.00	15%
vii)	**TELANGANA**	**440138.48**	**84150.41**	**90516.64**	**161651.08**	**776456.65**	**704658.81**	**378946.12**	**41320.45**	**420266.35**	**57862.96**	**278877.59**	60%
1	Adilabad	19190.11	1727.33	4064.27	3940.11	28921.83	26271.88	13717.99	2896.41	16614.32	3761.00	9151.28	63%
2	Bhadradri Kot	51729.98	2058.66	14635.01	4359.15	72782.82	65969.56	11607.51	3033.67	14640.83	3814.49	50659.06	22%
3	Jagtial	20699.16	7780.69	4835.11	13689.23	47004.19	42373.82	26861.91	4360.86	31222.74	5527.06	13403.48	74%
4	Jangaon	1278.29	161.14	273.53	393.65	2106.61	1895.95	1615.77	131.93	1748.58	131.93	148.25	92%
5	Jayashankar_B	37698.25	7513.11	6129.97	13428.83	64770.14	59014.90	29070.12	2013.64	31083.75	2723.56	27596.66	53%
6	Kamareddy	26524.00	6584.00	7155.00	10673.00	50936.00	46636.00	34151.00	1842.00	35993.00	3907.00	9027.00	77%
7	Karimnagar	16981.23	3248.98	3756.82	12725.44	36712.49	33160.41	22993.35	1972.42	24965.76	3667.54	7174.15	75%
8	Khammam	445.06	82.29	134.19	147.14	808.69	736.58	292.93	39.22	332.15	62.79	381.57	45%
9	Komarambhem_A	31819.00	703.00	1596.00	1261.00	35379.00	32352.00	5321.00	2016.00	7337.00	2153.00	24876.00	23%
10	Mahabubabad	775.76	216.27	204.69	329.80	1526.52	1373.63	568.96	178.74	747.70	176.70	627.97	54%
11	Mancherial	38003.60	6021.23	6086.12	8819.80	58930.75	53580.93	20352.30	1629.29	21981.58	2559.06	30669.59	41%
12	Medak	24580.94	4753.86	3682.60	9789.83	42807.23	38528.02	23666.17	908.19	24574.36	2788.12	12077.74	64%
13	Medchal_Malka	302.60	22.71	98.94	44.49	468.75	422.10	105.03	246.58	351.60	277.61	41.37	83%
14	Nirmal	33194.00	7171.00	5800.00	9517.00	55682.00	50469.00	16670.00	2048.00	18718.00	2273.00	31524.00	37%
15	Nizamabad	34984.00	13276.00	8087.00	26037.00	82384.00	74892.00	51289.00	5207.00	56495.00	5550.00	18665.00	75%
16	Peddapalli	19081.12	5680.07	3848.87	15341.78	43951.86	39949.20	19149.09	1715.06	20864.16	2863.19	18043.57	52%
17	Rajanna Sirci	14713.48	2454.05	3796.08	5348.50	26312.12	24324.21	18435.91	1561.93	19997.84	1880.77	4584.19	82%
18	Rangareddy	425.53	64.02	135.82	78.37	703.74	641.99	159.71	430.99	590.70	317.89	164.39	92%
19	Sangareddy	26358.28	3418.14	5471.11	5190.93	40438.42	36485.37	22196.34	3397.42	25594.14	5756.02	9887.12	70%
20	Siddipet	23971.97	7034.61	6449.79	12157.34	49613.74	44652.55	38077.23	3673.67	41750.89	4264.04	3393.38	94%
21	Vikarabad	2053.10	161.50	565.09	391.89	3171.57	2928.80	1337.04	267.80	1604.84	306.72	1285.04	55%
22	Warangal Rura	5214.91	1817.53	1503.87	3924.98	12461.27	11214.88	8188.70	665.16	8853.86	1184.16	2302.78	79%
23	Warangal_Urba	10114.09	2200.23	2206.75	4061.83	18582.90	16785.03	13119.04	1084.49	14203.54	1917.33	3194.00	85%
	Godavari basin Total	**2236887.36**	**295799.64**	**188004.58**	**643113.52**	**3363802.24**	**3143496.85**	**1320108.12**	**146641.41**	**1466753.78**	**211091.02**	**1534250.61**	47%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
V	**Krishna basin**												
i)	**Andhra Pradesh**	**135267.77**	**106900.62**	**17792.74**	**43300.63**	**303262.26**	**288095.46**	**117768.05**	**20354.33**	**138119.93**	**26648.35**	**164020.15**	48%
1	Anantapur	18909.94	11139.66	441.56	10840.52	41332.12	39265.36	30593.49	2880.95	33474.98	3648.66	14355.54	85%
2	Guntur	32092.97	38594.46	1589.05	11440.65	83719.48	79531.42	27887.59	5347.42	33234.94	8562.77	48112.45	42%
3	Krishna	32515.32	40361.24	14107.40	11592.09	98577.95	93649.34	27756.47	6242.86	33997.35	4782.83	59886.49	36%
4	Kurnool	51129.12	15917.80	998.12	8374.52	76415.40	72593.17	29396.93	5734.28	35130.26	9412.22	39632.02	48%
5	Prakasam	620.42	887.45	656.60	1052.84	3217.32	3056.18	2133.56	148.83	2282.40	241.87	2033.64	75%
ii)	**KARNATAKA**	**296828.58**	**236948.75**	**150666.07**	**220966.97**	**905410.41**	**827049.68**	**490976.99**	**47480.36**	**538457.41**	**58613.32**	**375766.11**	65%
1	Bagalkot	10477.23	21996.09	5949.98	15172.96	53596.26	49105.42	43221.72	3190.55	46412.28	3939.93	11951.33	95%
2	Belagavi	19322.78	35742.09	10301.39	21310.55	86676.81	80510.60	56670.98	7882.60	64553.58	10147.87	22756.75	80%
3	Bellary	20038.42	17031.85	13407.76	11495.30	61973.33	56233.12	27270.45	2925.91	30196.36	3932.84	30731.35	54%
4	Bidar	3507.50	218.28	719.25	350.00	4795.03	4476.53	1360.05	447.05	1807.10	477.52	2957.46	40%
5	Chikkamagalur	31220.22	11621.02	11539.37	8671.70	63052.32	52357.05	25264.04	2114.09	27378.13	2353.72	35845.66	52%
6	Chitradurga	17804.10	7332.89	15463.17	8238.35	48838.51	45350.82	47969.24	4197.82	52167.07	4371.99	4676.99	115%
7	Dakshin kanna	8.84	0.54	1.45	0.84	11.67	7.00	4.00	0.55	4.55	0.60	7.08	65%
8	Davangere	18077.31	15762.44	13696.62	23940.01	71476.39	66058.74	58179.35	3244.98	61424.34	3867.82	10978.87	93%
9	Dharwad	6189.77	2758.28	4039.67	2833.57	15821.28	14260.86	7526.91	822.57	8349.49	1251.68	7042.71	59%
10	Gadag	6049.25	7504.44	6011.62	8600.04	28165.36	26394.48	22175.82	1685.03	23860.85	2006.36	4294.65	90%
11	Hassan	3094.62	2251.85	3636.32	2069.24	11052.04	10024.77	9706.59	612.82	10319.42	619.08	1281.16	103%
12	Haveri	12193.21	22549.37	9025.00	15367.68	59135.26	54480.53	29018.17	2246.50	31264.67	2810.41	27306.69	57%
13	Kalburagi	37688.97	3108.92	9048.53	5122.70	54969.10	50767.90	16805.65	3773.37	20579.04	4198.09	33965.34	41%
14	Koppal	10628.84	18930.65	7018.01	22523.87	59101.38	54980.23	29268.00	1850.02	31118.02	2342.43	27490.94	57%
15	Raichur	15046.91	19693.90	9152.19	31843.88	75736.87	69962.59	27692.28	3025.89	30718.18	4779.57	43265.00	44%
16	Shivamogga	27979.11	26543.81	9187.81	17914.98	81625.70	73439.12	23521.59	2493.79	26015.37	3125.66	54978.47	35%
17	Tumakuru	6961.13	6964.58	7411.75	4143.06	25480.52	23945.59	21574.50	1640.38	23214.87	1708.71	2759.79	97%
18	Udupi	44.20	1.22	6.29	1.41	53.12	31.97	7.69	4.27	11.96	4.60	40.84	37%
19	Uttar kannada	4622.45	780.93	415.43	559.87	6378.68	4410.60	1316.00	189.53	1505.54	198.86	4863.82	34%
20	Vijayapura	29466.66	5399.38	9209.46	8791.72	52867.26	48908.68	30057.83	3468.86	33526.70	4078.24	18731.17	69%
21	Yadgir	16407.06	10756.21	5425.01	12015.25	44603.53	41343.07	12366.12	1663.79	14029.90	2397.36	29840.05	34%
iii)	**Maharashtra**	**417468.53**	**75822.07**	**17500.01**	**292783.94**	**803574.56**	**759360.26**	**459739.35**	**26384.41**	**486123.84**	**37061.32**	**274731.65**	64%
1	Ahmednagar	30623.87	3959.50	6192.57	11275.13	52051.08	49155.38	29525.55	1457.65	30983.20	1706.78	18674.12	63%
2	Beed	10737.25	1225.81	1064.54	4100.41	17127.99	16271.59	9585.79	754.76	10340.54	1291.53	5429.96	64%
3	Kolhapur	50470.74	9076.58	752.65	64601.24	124901.22	118264.30	47873.08	1701.94	49575.03	1940.24	68419.47	42%
4	Latur	27.19	4.65	0.00	10.71	42.55	40.42	22.61	1.35	23.96	2.49	15.26	59%
5	Osmanabad	36691.65	3860.24	1514.83	8751.47	50818.18	48277.28	26246.03	1325.20	27571.23	3520.69	18508.27	57%
6	Pune	93293.59	17948.80	1259.18	68981.59	181483.21	171685.85	116453.72	8069.90	124523.63	10469.34	50540.66	73%
7	Raigad	4.43	0.04	0.00	0.18	4.65	4.42	0.18	0.38	0.57	0.24	3.99	13%
8	Ratnagiri	48.49	0.12	0.00	1.44	50.06	47.56	3.31	1.33	4.65	1.86	42.25	10%
9	Sangli	51913.22	18934.01	0.61	61738.90	132586.72	123629.86	69474.17	3335.39	72809.60	6934.15	49771.52	59%
10	Satara	53083.96	9996.62	3761.57	32600.07	99442.23	94313.15	57715.66	4820.88	62536.54	5494.59	31075.95	66%
11	Sindhudurg	367.79	5.70	0.00	45.56	419.05	397.20	127.09	52.72	179.81	56.82	212.80	45%
12	Solapur	90200.56	10809.88	2954.07	40676.68	144641.16	137267.18	102711.82	4862.70	107574.55	5642.17	32032.08	78%
13	Thane	5.79	0.12	0.00	0.55	6.47	6.07	0.32	0.21	0.53	0.41	5.32	9%
iv)	**TELANGANA**	**309593.78**	**56679.88**	**94854.68**	**113217.10**	**574346.01**	**522026.56**	**324776.37**	**58336.68**	**383116.41**	**79839.74**	**147954.35**	73%
1	Bhadradri Kot	2018.53	134.96	440.53	291.74	2885.76	2597.21	1164.25	291.83	1456.08	293.69	1120.96	56%
2	Hyderabad	911.96	1672.00	352.46	1672.00	4609.00	4147.91	0.00	14164.38	14164.38	25835.00	0.00	341%
3	Jangaon	17593.16	2338.67	4721.28	6221.27	30874.38	28198.95	24119.75	1920.83	26044.24	1921.21	2438.73	92%
4	Jayashankar_B	11.37	1.62	1.91	2.81	17.70	15.93	6.63	0.92	7.55	0.84	8.46	47%
5	Jogulamba_Gad	12506.77	1804.72	4126.24	2435.65	20873.38	18786.76	8141.87	527.12	8669.00	1204.15	9440.71	46%
6	Khammam	35220.40	4053.94	9973.82	9179.40	58427.55	53615.22	31877.33	3729.82	35607.16	4659.33	19502.14	66%
7	Mahabubabad	21330.73	5206.33	5907.86	9523.83	41968.75	38707.73	25502.35	2635.60	28137.93	3216.12	10522.12	73%
8	Mahabubnagar	28664.00	5198.00	9113.00	9060.00	52035.00	47307.00	28684.00	3633.00	32317.00	4114.00	14704.00	68%
9	Medak	29.06	4.14	5.40	9.17	47.77	42.98	32.83	0.81	33.64	2.88	7.26	78%
10	Medchal_Malka	4960.84	464.93	1716.03	1004.23	8146.03	7330.91	2667.18	4267.49	6934.40	4690.39	841.15	95%
11	Nagarkurnool	32450.00	2887.51	12322.79	5996.66	53656.96	48291.26	27430.43	4394.34	31824.76	4741.21	16136.27	66%
12	Nalgonda	38917.00	8964.00	11369.00	23833.00	83083.00	75324.00	49929.00	5991.00	55920.00	7642.00	19791.00	74%
13	Rangareddy	23659.15	3416.63	8694.65	5434.41	41204.82	37345.61	25005.42	5284.93	30290.35	5862.78	6727.42	81%
14	Sangareddy	1231.28	70.07	284.61	175.99	1761.95	1585.76	1215.43	66.84	1282.27	195.79	215.61	81%
15	Siddipet	974.67	267.62	308.92	512.66	2063.86	1857.47	1735.60	121.74	1857.34	160.92	49.13	100%
16	Suryapet	21026.47	9794.01	7303.85	16665.05	54789.38	49896.38	27842.01	2726.72	30568.73	4341.70	17791.39	61%
17	Vikarabad	21474.90	2007.50	5385.91	4232.11	33100.43	30140.20	14291.96	2727.20	17019.16	3342.28	12505.96	56%
18	Wanaparthy	10459.01	2539.45	2335.44	3549.01	18882.93	17200.43	10013.16	1522.52	11535.68	1979.74	5259.21	67%
19	Warangal_Rura	11112.88	2775.48	2987.26	6200.39	23076.03	20802.64	17349.20	1381.08	18730.29	1572.04	2889.58	90%
20	Warangal_Urba	2091.91	414.77	459.25	740.17	3706.10	3381.97	4025.96	110.51	4136.46	358.67	0.00	122%
21	Yadadri_Bhong	22949.71	2663.52	7044.47	6477.54	39135.23	35450.23	23742.00	2838.00	26580.00	3705.00	8003.24	75%
	Krishna basin Total	**1159158.67**	**476351.32**	**280813.49**	**670268.64**	**2586593.24**	**2396531.96**	**1393260.77**	**152555.78**	**1545817.58**	**202162.73**	**962472.25**	65%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
VI	**Cauvery basin**												
i)	**KARNATAKA**	**118125.34**	**142428.10**	**61058.48**	**63212.32**	**384824.21**	**354412.04**	**207889.64**	**24089.66**	**231979.30**	**30601.30**	**151015.01**	65%
1	Bangalore rur	3301.84	1652.40	2286.59	1471.22	8712.06	7889.11	9045.00	370.56	9415.56	375.70	0.00	119%
2	Bangalore urb	2355.26	886.37	1483.62	1041.73	5766.98	5358.02	6973.95	478.61	7452.56	478.61	0.00	139%
3	Chamrajnagara	22352.92	7909.49	6062.49	4853.70	41178.59	38831.28	29633.13	2467.16	32100.29	3414.34	9492.13	83%
4	Chikballapur	26.94	9.71	10.52	7.97	55.14	51.27	69.36	5.34	74.70	5.34	0.00	146%
5	Chikkamagalur	3494.75	630.20	1089.51	248.62	5463.10	4017.45	1212.97	186.96	1399.93	197.42	4052.70	35%
6	Hassan	16116.55	24971.68	8838.00	15976.59	65902.79	58846.64	31796.51	2440.07	34236.57	3037.74	31178.17	58%
7	Kodagu	16286.77	1942.48	6385.40	1843.10	26457.73	22729.23	6581.39	1212.29	7793.68	1554.52	18321.82	34%
8	Mandya	11155.86	54173.08	7481.59	15549.24	88359.76	82669.44	46594.46	2415.29	49009.76	4201.14	37564.15	59%
9	Mysuru	27551.65	28487.71	12551.05	10004.29	78594.72	73123.62	26747.50	10747.82	37495.31	13184.78	38662.43	51%
10	Ramanagaram	6892.90	10549.34	7003.90	6668.95	31115.07	29689.74	26876.22	1791.87	28668.09	1913.45	1921.57	97%
11	Tumakuru	8589.90	11215.64	7865.82	5546.91	33218.27	31206.24	22359.14	1973.69	24332.85	2238.26	9822.05	78%
ii)	**KERALA**	**25986.50**	**61.74**	**698.96**	**774.46**	**27521.66**	**24769.49**	**2219.39**	**4067.26**	**6286.65**	**0.00**	**0.00**	25%
1	Errnakulam	0.99	0.01	0.21	0.15	1.36	1.22	0.20	0.34	0.54	0.00	0.00	44%
2	Idukki	758.00	4.99	161.82	23.31	948.13	853.31	99.73	189.58	289.31	0.00	0.00	34%
3	Kannur	17.82	0.00	0.00	1.07	18.90	17.01	4.88	3.79	8.67	0.00	0.00	51%
4	Kozhikkode	36.82	0.43	5.55	3.52	46.33	41.69	11.72	18.10	29.82	0.00	0.00	72%
5	Malappuram	8.24	0.04	1.36	1.39	11.04	9.94	1.30	3.90	5.20	0.00	0.00	52%
6	Palakkad	2588.59	27.71	530.01	127.82	3274.14	2946.72	570.65	212.63	783.28	0.00	0.00	27%
7	Wayanad	22576.03	28.57	0.00	617.19	23221.78	20899.60	1530.91	3638.92	5169.83	0.00	0.00	25%
iii)	**Puducherry**	**1991.63**	**4029.08**	**281.01**	**531.40**	**6833.17**	**6149.85**	**509.94**	**387.00**	**896.94**	**175.69**	**65.89**	15%
1	Karaikal	1991.63	4029.08	281.01	531.40	6833.17	6149.85	509.94	387.00	896.94	175.69	65.89	15%
iv)	**TAMILNADU**	**219906.44**	**225968.71**	**53045.69**	**73043.13**	**571963.93**	**514767.66**	**465207.38**	**37157.04**	**502364.30**	**41451.67**	**115588.54**	98%
1	Ariyalur	17088.38	12349.14	2549.30	2870.81	34857.63	31371.87	11192.78	1682.35	12875.12	1748.15	18430.93	41%
2	Coimbatore	8650.96	5797.70	3341.48	3813.40	21603.52	19443.18	20116.50	3033.45	23149.93	3438.33	858.79	119%
3	Cuddalore	6743.44	26603.06	4963.28	854.90	39164.68	35248.22	6128.43	984.17	7112.59	1047.52	28072.27	20%
4	Dharmapuri	5180.36	3474.58	1294.03	2425.51	12374.49	11137.03	14878.26	634.85	15513.10	721.58	863.23	139%
5	Dindigul	24960.25	6947.87	4815.27	10900.87	47624.20	42861.79	47739.33	1826.97	49566.29	2214.11	6203.00	116%
6	Erode	17300.28	40945.97	5017.07	6502.15	69765.50	62788.96	56158.24	6029.53	62187.79	6446.14	8914.95	99%
7	Karur	13721.52	10111.86	4133.44	3057.12	31023.95	27921.56	27539.31	1040.44	28579.75	1197.13	4896.64	102%
8	Krishnagiri	3689.92	1496.29	1218.49	808.03	7212.73	6491.47	3995.77	515.54	4511.31	599.71	1932.98	69%
9	Madurai	0.70	0.18	0.20	0.44	1.52	1.37	1.93	0.05	1.98	0.06	0.00	144%
10	Nagapattinam	5542.08	4983.05	801.91	1258.06	12585.10	11326.59	14435.19	959.26	15394.45	1042.13	754.01	136%
11	Namakkal	15241.88	13518.19	3416.61	4810.28	36986.95	33288.25	42863.10	2098.17	44961.24	2285.35	2951.70	135%
12	Perambalur	3418.86	1294.18	606.07	993.04	6312.15	5680.94	8175.72	377.99	8553.72	410.87	684.98	151%
13	Pudukkottai	5630.39	4305.43	1410.70	3158.78	14505.31	13054.77	8174.42	323.30	8497.72	354.72	4525.63	65%
14	Salem	15510.75	9645.32	3295.61	5809.25	34260.91	30834.83	35667.49	3810.88	39478.33	5290.82	1748.41	128%
15	Thanjavur	20876.27	27722.32	3400.03	5683.91	57682.52	51914.28	56882.36	1741.25	58623.63	1920.46	4071.42	113%
16	The nilgiris	6204.17	353.29	1484.08	128.26	8169.82	7352.83	559.75	378.57	938.31	423.74	6369.35	13%
17	Theni	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	53%
18	Thiruvarur	9135.19	12168.09	1219.51	5641.15	28163.94	25347.58	21088.85	1283.63	22372.48	1376.07	5801.64	88%
19	Tiruchirappalli	21666.90	33077.37	4076.73	5154.15	63975.17	57577.66	43557.39	7162.13	50719.50	7389.41	16649.83	88%
20	Tiruppur	19344.14	11174.80	6001.88	9173.00	45693.83	41124.46	46052.57	3274.51	49327.05	3545.38	1858.79	120%
	Cauvery basin Total	**366009.92**	**372487.63**	**115084.14**	**137561.31**	**991142.97**	**900099.04**	**675826.36**	**65700.95**	**741527.19**	**72228.67**	**266669.44**	82%
Source: Central Ground Water Board, Faridabad													
VII	**Pennar Basin**												
i)	**Andhra Pradesh**	**274273.05**	**104994.75**	**3997.53**	**115776.90**	**499028.74**	**474067.19**	**271745.45**	**27160.14**	**298906.29**	**39281.52**	**222265.35**	63%
1	Anantapur	70292.06	34998.34	572.44	39580.48	145437.88	138157.64	112362.51	12004.05	124366.02	17974.34	38943.46	90%
2	Chittoor	32187.10	7676.15	518.37	8957.43	49338.46	46873.29	24262.89	2011.04	26273.52	3311.61	21177.38	56%
3	Kadapa	93117.83	15838.40	2050.61	11143.90	122139.83	116031.14	74648.37	4961.83	79614.19	6097.02	53746.74	69%
4	Kurnool	38646.31	27507.20	207.77	17933.70	84295.18	80079.59	23800.92	5235.35	29033.21	6920.50	53652.04	36%
5	Nellore	39197.04	18507.54	2.59	37563.22	95273.64	90508.54	33707.47	2838.52	36546.72	4562.42	54329.43	40%
6	Prakasam	832.71	467.12	645.76	598.17	2543.75	2416.99	2963.29	109.34	3072.63	415.64	416.31	127%
ii)	**KARNATAKA**	**18617.09**	**12163.60**	**12589.78**	**8183.75**	**51554.20**	**47484.72**	**64640.32**	**4422.75**	**69063.05**	**4516.16**	**1629.23**	145%
1	Bangalore rur	918.41	564.27	700.71	456.51	2639.90	2377.51	3000.02	152.16	3152.18	152.66	0.00	133%
2	Chikballapur	9806.88	7395.40	6282.74	4276.46	27761.47	25378.51	39043.24	2377.69	41420.92	2399.36	0.00	163%
3	Kolar	1091.48	954.11	771.90	728.46	3545.95	3348.77	6846.41	343.67	7190.08	343.67	0.00	215%
4	Tumakuru	6800.32	3249.82	4834.42	2722.32	17606.89	16379.94	15750.65	1549.23	17299.88	1620.46	1629.23	106%
	Pennar Basin Total	**292890.14**	**117158.35**	**16587.31**	**123960.65**	**550582.94**	**521551.92**	**336385.77**	**31582.89**	**367969.34**	**43797.68**	**223894.58**	71%
Source: Central Ground Water Board, Faridabad													

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
VIII_a	**East flowing rivers between Mahanadi and Godavari Basin**												
i)	**Andhra Pradesh**	**190879.45**	**116434.15**	**32084.63**	**63295.86**	**402700.55**	**382146.42**	**93097.91**	**18908.78**	**112005.18**	**31320.39**	**280716.80**	29%
1	East Godavari	44454.18	48512.84	1713.53	23659.16	118341.61	112426.09	19581.55	3942.84	23526.27	2265.49	89883.51	21%
2	Srikakulam	34580.62	35287.58	17700.96	19579.66	107143.88	101788.03	40415.09	8684.73	49097.93	16903.92	62811.40	48%
3	Visakhapatnam	52633.36	10699.79	5880.67	2580.17	71800.51	67790.82	12513.13	5768.33	18279.95	7230.90	50456.86	27%
4	Vizianagaram	59211.29	21933.94	6789.47	17476.87	105414.56	100141.48	20588.14	512.89	21101.03	4920.08	77565.04	21%
ii)	**Odisha**	**77972.55**	**31910.16**	**27719.25**	**17887.74**	**155489.70**	**143087.67**	**33414.05**	**17218.79**	**50632.84**	**0.00**	**0.00**	35%
1	Gajapati	12426.51	2564.56	4946.34	2536.35	22473.76	20792.34	4790.63	1717.81	6508.44	0.00	0.00	31%
2	Ganjam	35808.30	25254.22	16169.91	11800.09	89032.52	81668.53	20971.86	10962.12	31933.98	0.00	0.00	39%
3	Kalahandi	1551.48	81.84	171.87	80.37	1885.55	1748.11	189.47	143.70	333.17	0.00	0.00	19%
4	Kandhamal	4864.19	436.49	1113.07	470.37	6884.12	6267.63	863.22	478.52	1341.73	0.00	0.00	21%
5	Khurda	956.49	444.40	314.15	393.68	2108.72	1954.98	462.12	209.81	671.93	0.00	0.00	34%
6	Koraput	2320.35	74.01	535.58	88.51	3018.45	2810.62	349.33	502.63	851.96	0.00	0.00	30%
7	Nayagarh	1613.38	421.46	375.46	522.08	2932.38	2716.35	699.99	181.69	881.68	0.00	0.00	32%
8	Rayagada	18144.36	2613.73	4084.48	1975.19	26817.76	24809.49	4992.07	2992.91	7984.98	0.00	0.00	32%
9	Sundargarh	287.49	19.44	8.39	21.10	336.43	319.63	95.35	29.62	124.97	0.00	0.00	39%
	East flowing rivers between Mahanadi and Godavari Basin Total	**268852.00**	**148344.31**	**59803.89**	**81183.60**	**558190.25**	**525234.09**	**126511.96**	**36127.57**	**162638.02**	**31320.39**	**280716.80**	31%

Source: Central Ground Water Board, Faridabad

VIII_b	**East flowing rivers between Godavari and Krishna Basin**												
i)	**Andhra Pradesh**	**73762.39**	**73010.90**	**7580.46**	**47821.57**	**202171.90**	**192062.67**	**78711.64**	**6515.93**	**85227.74**	**7189.01**	**114041.18**	44%
1	Krishna	20375.68	30443.76	7533.60	5784.91	64138.05	60929.66	19466.53	3529.14	22996.65	2618.17	38641.51	38%
2	West Godavari	53386.70	42567.13	46.86	42036.66	138033.85	131133.01	59245.12	2986.80	62231.09	4570.84	75399.67	47%
ii)	**TELANGANA**	**6463.34**	**771.71**	**2494.24**	**1365.34**	**11094.63**	**10025.20**	**5635.46**	**377.80**	**6013.25**	**517.48**	**3872.26**	60%
1	Bhadradri_Kot	3944.99	171.55	1642.32	342.22	6101.09	5490.98	3633.65	203.88	3837.53	224.60	1632.73	70%
2	Khammam	2518.35	600.17	851.92	1023.12	4993.55	4534.22	2001.81	173.91	2175.73	292.88	2239.53	48%
	East flowing rivers between Godavari and Krishna Basin Total	**80225.73**	**73782.61**	**10074.70**	**49186.91**	**213266.53**	**202087.87**	**84347.11**	**6893.73**	**91241.00**	**7706.49**	**117913.43**	45%

Source: Central Ground Water Board, Faridabad

VIII_c	**East flowing rivers between Krishna and Pennar Basin**												
i)	**Andhra Pradesh**	**82636.89**	**53600.83**	**55674.25**	**58801.18**	**250707.44**	**238173.81**	**73253.35**	**14448.84**	**87693.58**	**24161.89**	**154656.08**	37%
1	Guntur	20805.67	18370.85	956.18	7350.40	47477.66	45104.12	11270.93	3583.66	14852.67	5585.39	30063.19	33%
2	Kadapa	15.34	4.09	0.35	4.00	23.78	22.59	19.70	1.29	21.00	2.02	8.47	93%
3	Kurnool	249.58	469.00	0.12	465.78	1184.42	1125.24	91.15	42.38	133.53	45.29	994.94	12%
4	Nellore	23854.92	9492.00	2.41	16152.85	49501.01	47025.52	12760.98	864.24	13625.52	1690.91	32846.51	29%
5	Prakasam	37711.39	25264.90	54715.19	34828.15	152520.56	144896.35	49110.59	9957.27	59060.87	16838.28	90742.98	41%
	East flowing rivers between Krishna and Pennar Basin Total	**82636.89**	**53600.83**	**55674.25**	**58801.18**	**250707.44**	**238173.81**	**73253.35**	**14448.84**	**87693.58**	**24161.89**	**154656.08**	37%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
IX_a	**East flowing rivers between Pennar and Cauvery Basin**												
i)	**Andhra Pradesh**	**148154.98**	**42980.84**	**687.67**	**68146.15**	**259964.11**	**246967.17**	**114536.90**	**10280.46**	**124815.75**	**14959.11**	**130370.26**	51%
1	Chittoor	83531.90	24714.85	684.63	29072.57	138000.54	131102.71	70994.11	7583.96	78576.48	10215.39	59242.62	60%
2	Kadapa	177.82	30.51	3.03	31.10	242.39	230.28	221.93	8.89	230.81	12.96	59.79	100%
3	Nellore	64445.25	18235.49	0.00	39042.49	121721.18	115634.19	43320.85	2687.62	46008.46	4730.75	71067.86	40%
ii)	**KARNATAKA**	**27022.96**	**12098.04**	**12502.19**	**12489.36**	**64112.54**	**60698.90**	**104810.89**	**6893.29**	**111704.17**	**6893.42**	**0.00**	184%
1	BANGALORE RUR	5810.68	1000.47	2011.31	1338.33	10160.78	9654.02	11092.07	896.68	11988.76	896.68	0.00	124%
2	BANGALORE URB	3280.78	1123.19	2139.95	1294.04	7837.97	7406.75	10023.38	881.60	10904.99	881.60	0.00	147%
3	CHIKBALLAPUR	3086.95	2010.03	1607.72	1306.96	8011.67	7447.65	11794.10	665.62	12459.72	665.75	0.00	167%
4	KOLAR	14844.56	7964.36	6743.21	8550.02	38102.13	36190.49	71901.34	4449.39	76350.71	4449.39	0.00	211%
iii)	**Puducherry**	**7299.24**	**1961.94**	**606.49**	**2294.56**	**12162.22**	**10946.00**	**11875.00**	**2393.13**	**14268.13**	**3652.00**	**0.00**	130%
1	Puducherry	7299.24	1961.94	606.49	2294.56	12162.22	10946.00	11875.00	2393.13	14268.13	3652.00	0.00	130%
iv)	**TAMILNADU**	**222587.76**	**427898.00**	**74410.22**	**56151.89**	**781047.77**	**702943.09**	**545626.67**	**110061.84**	**655688.47**	**119336.23**	**139373.00**	93%
1	Ariyalur	4324.08	1952.76	782.38	477.34	7536.58	6782.91	3113.81	535.45	3649.26	553.43	3115.68	54%
2	Cuddalore	28279.20	71060.29	18082.16	4737.10	122158.75	109942.90	49475.11	33035.31	82510.40	33343.55	32157.97	75%
3	Dharmapuri	10188.10	12074.99	2596.06	4296.33	29155.51	26239.96	28701.95	2841.69	31543.64	3229.89	2165.47	120%
4	Krishnagiri	14511.49	12332.10	3438.01	4284.12	34565.73	31109.16	28876.11	10911.30	39787.43	12390.23	3387.74	128%
5	Namakkal	1259.96	525.89	270.43	493.91	2550.20	2295.17	3046.09	96.42	3142.52	109.59	391.95	137%
6	Perambalur	7734.90	6643.52	1406.60	1843.04	17628.08	15865.25	16608.56	788.94	17397.51	855.63	1757.57	110%
7	Salem	10095.96	4767.74	1661.87	4001.63	20527.21	18474.48	31345.16	1047.93	32393.07	1242.63	2396.46	175%
8	Tiruchirappalli	325.58	114.98	63.80	71.95	576.32	518.69	627.31	15.86	643.17	17.80	0.00	124%
9	Kancheepuram	30288.60	55675.33	3524.13	12997.11	102485.13	92236.67	56417.55	5083.96	61501.53	7080.27	31539.86	67%
10	Vellore	24609.66	25744.63	7427.74	4897.06	62679.07	56411.16	53587.85	12860.06	66447.92	14528.11	5438.81	118%
11	Tiruvannamalai	36683.60	66936.06	4754.19	4419.76	112793.62	101514.29	102551.85	10053.19	112605.04	11426.43	3654.01	111%
12	Thiruvallur	23140.32	63162.15	2168.18	2428.84	90899.47	81809.52	32102.37	24932.87	57035.25	25822.85	27088.83	70%
13	Viluppuram	29872.61	106907.57	28146.37	10725.46	175651.94	158086.78	139172.94	5012.26	144185.14	5690.54	26278.65	91%
14	Chennai	1273.68	0.00	88.28	478.24	1840.17	1656.17	0.00	2846.60	2846.60	3045.28	0.00	172%
15	Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	East flowing rivers between Pennar and	**405064.95**	**484938.83**	**88206.57**	**139081.97**	**1117286.64**	**1021555.16**	**776849.46**	**129628.72**	**906476.52**	**144840.75**	**269743.26**	89%

Source: Central Ground Water Board, Faridabad

IX_b	**East flowing rivers South of Cauvery Basin**												
i)	**KERALA**	**179.15**	**2.62**	**49.64**	**33.30**	**264.72**	**238.96**	**76.79**	**59.04**	**135.83**	**0.00**	**0.00**	57%
1	Idukki	118.73	2.32	25.35	27.34	173.73	156.36	67.31	47.45	114.76	0.00	0.00	73%
2	Kollam	29.17	0.09	12.01	2.29	43.56	39.20	4.12	1.75	5.87	0.00	0.00	15%
3	Pathanamthitta	19.21	0.06	7.21	1.65	28.14	25.33	2.36	4.47	6.83	0.00	0.00	27%
4	Thiruvananthapuram	12.05	0.15	5.07	2.01	19.28	18.06	3.01	5.37	8.38	0.00	0.00	46%
ii)	**TAMILNADU**	**208209.29**	**271520.04**	**55028.80**	**86373.16**	**621131.25**	**559018.14**	**269466.33**	**15799.73**	**285266.04**	**18769.72**	**291966.85**	51%
1	Dindigul	8793.76	2379.75	1932.95	3271.16	16377.61	14739.87	13462.37	663.39	14125.75	790.25	3918.93	96%
2	Kanniyakumari	139.50	619.85	54.78	105.20	919.33	827.40	75.37	42.30	117.66	48.91	703.12	14%
3	Madurai	20878.43	31368.13	4475.77	9738.52	66460.84	59814.76	37939.33	3751.75	41691.08	4469.24	19842.05	70%
4	Pudukkottai	33269.44	35416.60	7180.46	12070.73	87937.20	79143.50	33154.99	1518.66	34673.64	1674.18	44314.33	44%
5	Ramanathapuram	18437.81	30036.98	4441.06	7929.13	60844.97	54760.49	5475.32	1354.40	6829.72	1613.36	47671.80	12%
6	Sivaganga	26822.91	50315.47	4798.92	17586.28	99523.55	89571.20	14856.57	1415.74	16272.30	1701.49	73013.15	18%
7	Thanjavur	11294.83	7688.85	1925.03	3602.96	24511.67	22060.50	22001.18	666.15	22667.34	722.24	2639.77	103%
8	Theni	12996.24	14067.48	8000.60	8198.05	43262.38	38936.15	28276.24	753.82	29030.06	898.01	10139.36	75%
9	Thoothukkudi	20280.08	22349.95	5734.44	6653.03	55017.51	49515.75	19779.17	1528.10	21307.27	1877.28	28934.38	43%
10	Tiruchirappalli	2018.83	1267.94	325.15	576.63	4188.55	3769.70	3831.61	215.63	4047.24	229.72	381.31	107%
11	Tirunelveli	29732.94	57310.38	9224.14	7522.42	103789.89	93410.90	58346.83	1996.18	60342.98	2372.87	40401.44	65%
12	Virudhunagar	23544.52	18698.65	6935.50	9119.05	58297.73	52467.92	32267.36	1893.61	34160.98	2372.17	20007.19	65%
	East flowing rivers South of Cauvery Basin Total	**208388.44**	**271522.66**	**55078.44**	**86406.46**	**621395.96**	**559257.09**	**269543.12**	**15858.77**	**285401.87**	**18769.72**	**291966.85**	51%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
X	**Narmada basin**												
i)	**Chhattisgarh**	**3494.05**	**791.90**	**526.33**	**898.41**	**5710.68**	**5208.61**	**2171.54**	**184.78**	**2356.33**	**224.53**	**2811.30**	45%
1	Bilaspur	1.11	0.11	0.14	0.07	1.43	1.34	0.23	0.11	0.34	0.13	0.98	25%
2	Kawardha	3261.19	673.63	492.55	762.81	5190.17	4740.10	1882.49	156.70	2039.19	186.67	2669.69	43%
3	Mungeli	0.28	0.03	0.00	0.03	0.34	0.31	0.10	0.04	0.14	0.01	0.20	45%
4	Rajnandgaon	231.47	118.13	33.64	135.50	518.74	466.87	288.72	27.93	316.66	37.72	140.42	68%
ii)	**GUJARAT**	**69267.30**	**18324.42**	**0.00**	**23816.19**	**111407.92**	**105837.52**	**43966.34**	**4626.63**	**48592.98**	**5217.22**	**55959.78**	46%
1	Bharuch	24548.98	2725.69	0.00	5690.44	32965.10	31316.85	12665.17	1746.88	14412.05	1869.71	16519.93	46%
2	Chhota udepur	19095.32	7086.32	0.00	8492.69	34674.35	32940.63	16965.95	1633.69	18599.64	1926.33	13803.29	56%
3	Dahod	290.58	274.26	0.00	105.37	670.21	636.70	272.47	47.68	320.15	58.82	298.28	50%
4	Narmada	8948.07	5495.55	0.00	6251.19	20694.82	19660.07	3219.33	795.83	4015.16	894.36	15427.01	20%
5	Panchmahal	12.62	794.87	0.00	863.15	1670.63	1587.11	572.29	68.49	640.77	78.16	926.07	40%
6	Surat	2827.93	325.30	0.00	126.90	3280.13	3116.12	282.15	81.72	363.87	107.52	2714.31	12%
7	Vadodara	13543.81	1622.42	0.00	2286.45	17452.67	16580.04	9988.98	252.36	10241.34	282.32	6270.88	62%
iii)	**MADHYA PRADESH**	**790221.56**	**42833.02**	**21215.80**	**288956.56**	**1143226.94**	**1081070.31**	**405339.48**	**36195.28**	**441535.16**	**40710.72**	**632997.17**	41%
1	Alirajpur	16257.89	733.11	0.00	1508.03	18499.03	17209.04	5347.52	2291.68	7639.20	2214.17	9303.60	44%
2	Anuppur	4017.51	10.57	752.22	21.54	4801.83	4561.66	95.50	209.29	304.79	212.95	4221.82	7%
3	Balaghat	13609.58	123.89	1387.91	98.61	15219.99	14457.46	191.69	374.14	565.83	428.05	13781.60	4%
4	Barwani	32761.65	2003.89	0.00	25952.84	60718.38	57560.80	25842.77	2454.76	28297.54	2721.15	28634.86	49%
5	Betul	24636.39	1341.32	6113.28	4372.46	36463.44	34600.44	17591.42	1109.97	18701.39	1223.64	15618.90	54%
6	Bhopal	94.08	33.58	0.00	25.75	153.40	145.74	89.23	15.28	104.51	15.57	38.64	72%
7	Burhanpur	3231.47	126.92	0.00	627.80	3986.19	3772.00	2396.94	148.40	2545.34	153.94	1198.86	67%
8	Chhindwara	17152.58	317.50	2361.14	1135.03	20966.25	19867.33	5474.54	707.52	6182.06	792.28	13494.38	31%
9	Damoh	1491.09	120.25	0.00	913.50	2524.84	2375.39	807.53	132.13	939.66	148.43	1399.62	40%
10	Dewas	30085.95	1419.48	0.00	5943.78	37449.21	35432.52	24761.31	1558.11	26319.41	1744.20	8693.86	74%
11	Dhar	49099.44	3310.92	0.00	22341.32	74751.68	70480.17	32248.21	3554.53	35802.74	4282.44	34767.32	51%
12	Dindori	26248.35	88.96	3685.65	298.53	30321.48	28284.19	1478.45	1354.07	2832.52	1587.53	25015.11	10%
13	Harda	31543.11	2740.33	0.00	15042.69	49326.13	46860.07	13592.34	1089.37	14681.71	1178.07	31926.26	31%
14	Hoshangabad	124441.00	11000.00	0.00	61145.00	196586.00	186782.00	39817.00	1863.00	41680.00	2277.00	144408.55	22%
15	Indore	9052.96	1745.19	0.00	2695.18	13493.33	12818.68	10458.74	1846.72	12305.46	1966.71	2153.67	96%
16	Jabalpur	57062.31	3579.27	1070.00	6569.87	68281.45	64865.27	25317.45	2680.04	27997.49	2885.11	36260.70	43%
17	Jhabua	75.42	2.92	0.00	8.26	86.60	77.45	41.60	10.26	51.86	9.47	24.84	67%
18	Katni	6094.84	286.03	0.00	705.99	7086.85	6732.45	1724.33	524.99	2249.31	554.39	4374.99	33%
19	Khandwa	50934.79	2666.91	0.00	50788.46	104390.16	98815.99	39354.05	2548.49	41902.94	3225.96	55853.74	42%
20	Khargone	60976.50	3188.01	0.00	57653.17	121817.69	115506.34	40895.49	3728.54	44624.03	4337.14	69725.47	39%
21	Mandla	39955.84	655.88	5822.27	2667.07	49101.06	44225.96	5441.57	2100.01	7541.58	2443.09	36026.32	17%
22	Narsinghpur	102146.08	3185.27	0.00	15695.67	121027.02	114932.78	70620.03	2072.82	72692.85	2192.33	41809.51	63%
23	Raisen	45178.61	2061.79	0.00	5402.15	52642.55	50010.44	21352.55	2001.78	23354.33	2099.22	26258.45	47%
24	Sagar	4013.84	194.51	0.00	573.61	4781.96	4507.34	2451.84	121.93	2573.77	132.83	1904.39	57%
25	Sehore	23353.00	1599.34	0.00	5919.99	30872.32	29328.05	13046.42	1008.99	14055.41	1148.85	14981.44	48%
26	Seoni	16625.68	295.74	10.41	847.02	17778.85	16767.49	4889.51	683.84	5573.35	730.99	11044.42	33%
27	Umaria	81.59	1.45	12.92	3.27	99.23	93.23	11.47	4.61	16.08	5.21	75.85	17%
iv)	**Maharashtra**	**5821.61**	**220.73**	**0.00**	**664.21**	**6706.55**	**6161.93**	**1295.67**	**594.74**	**1890.40**	**2811.53**	**2058.13**	31%
1	Dhule	60.95	7.06	0.00	30.78	98.79	92.77	40.38	2.49	42.87	11.11	41.28	46%
2	Nandurbar	5760.66	213.66	0.00	633.43	6607.76	6069.16	1255.29	592.25	1847.53	2800.42	2016.85	30%
	Narmada basin Total	**868804.52**	**62170.06**	**21742.13**	**314335.37**	**1267052.09**	**1198278.37**	**452773.03**	**41601.43**	**494374.86**	**48964.00**	**693826.37**	41%

Source: Central Ground Water Board, Faridabad

XI	**Tapi Basin**												
i)	**GUJARAT**	**76180.46**	**18052.86**	**0.00**	**19295.60**	**113528.90**	**107852.45**	**26788.38**	**3339.39**	**30127.77**	**3307.79**	**77256.17**	28%
1	Bharuch	7817.12	1684.14	0.00	2213.83	11715.09	11129.34	3949.59	379.65	4329.25	256.46	6866.34	39%
2	Dang	153.41	106.80	0.00	2.29	262.50	249.38	44.89	12.87	57.76	15.16	187.40	23%
3	Narmada	2555.43	1045.75	0.00	880.72	4481.90	4257.81	441.37	176.06	617.43	197.64	3592.38	15%
4	Surat	48618.92	12897.98	0.00	15035.07	76551.96	72724.35	16611.00	2141.38	18752.38	2143.89	53648.81	26%
5	Tapi	17035.58	2318.18	0.00	1163.69	20517.45	19491.58	5741.54	629.41	6370.95	694.63	12961.24	33%
ii)	**MADHYA PRADESH**	**76946.20**	**3529.96**	**5354.59**	**23484.19**	**109314.95**	**103543.72**	**55910.10**	**3751.36**	**59661.46**	**3993.33**	**43141.69**	58%
1	Barwani	10520.83	588.65	0.00	2827.03	13936.51	13214.73	9816.29	879.44	10695.72	899.75	2430.87	81%
2	Betul	33363.48	1565.42	5354.59	5447.51	45731.00	43368.47	22777.94	1287.75	24065.69	1317.22	19080.16	55%
3	Burhanpur	27905.81	1040.22	0.00	5199.57	34145.60	32241.37	20368.47	1288.79	21657.26	1436.38	10243.20	67%
4	Harda	576.89	112.67	0.00	649.31	1338.87	1271.93	202.66	17.63	220.30	20.93	1045.69	17%
5	Khandwa	1875.29	69.54	0.00	423.20	2368.04	2249.54	1359.11	102.17	1461.28	108.79	766.32	65%
6	Khargone	2703.90	153.47	0.00	8937.56	11794.93	11197.68	1385.63	175.59	1561.22	210.27	9575.45	14%
iii)	**Maharashtra**	**315963.70**	**27980.13**	**1889.50**	**127297.35**	**473130.67**	**445612.98**	**290991.28**	**16106.02**	**307097.25**	**41443.37**	**117825.57**	69%
1	Akola	32069.45	1387.94	300.58	8646.70	42404.67	39446.43	21280.60	2347.07	23627.66	3180.40	12850.31	60%
2	Amravati	31066.02	1576.11	762.44	12660.98	46065.56	42507.22	32105.73	945.57	33051.30	1299.41	9719.58	78%
3	Aurangabad	6957.58	560.58	36.24	3042.55	10596.96	10063.11	6701.41	283.67	6985.07	705.62	2671.46	69%
4	Buldhana	36784.08	2420.20	185.08	11367.87	50757.25	47813.01	34422.87	1786.37	36209.24	2179.19	12065.82	76%
5	Dhule	43779.24	7092.51	0.00	20516.59	71388.33	67243.60	34299.29	1772.04	36071.33	6076.89	26863.32	54%
6	Jalgaon	85940.69	6350.27	570.97	44819.97	137681.88	130718.85	100540.00	4874.08	105414.08	15319.17	19189.82	81%
7	Jalna	164.85	9.38	0.08	42.19	216.50	205.53	123.08	4.30	127.37	7.73	75.25	62%
8	Nandurbar	33295.50	2409.93	0.00	8304.68	44010.10	41347.69	16333.81	2472.10	18805.89	9133.48	15921.57	45%
9	Nashik	38576.17	5712.89	0.00	15677.05	59966.12	56762.92	39552.09	1232.81	40784.89	3023.96	14936.25	72%
10	Washim	7330.11	460.31	34.11	2218.77	10043.30	9504.61	5632.41	388.01	6020.42	517.53	3532.19	63%
	Tapi Basin Total	**469090.36**	**49562.95**	**7244.09**	**170077.14**	**695974.52**	**657009.15**	**373689.77**	**23196.76**	**396886.48**	**48744.49**	**238223.42**	60%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
XII&XII	**West flowing rivers South of Tapi Basin**												
i)	**Dadra Nagar Haveli**	**5737.20**	**137.57**	**330.00**	**656.82**	**6861.59**	**6518.59**	**750.46**	**1292.40**	**2042.86**	**1292.00**	**4476.00**	31%
1	Dadra Nagar Haveli	5737.20	137.57	330.00	656.82	6861.59	6518.59	750.46	1292.40	2042.86	1292.00	4476.00	31%
ii)	**Daman_Diu**	**1154.07**	**37.42**	**0.00**	**92.56**	**1284.05**	**1220.05**	**0.00**	**395.85**	**34.46**	**194.97**	**625.29**	3%
1	Daman	1154.07	37.42	0.00	92.56	1284.05	1220.05	0.00	395.85	34.46	194.97	625.29	3%
iii)	**GOA**	**18995.86**	**2532.99**	**644.00**	**4550.99**	**26720.84**	**16032.90**	**2058.99**	**3314.97**	**5369.96**	**3669.97**	**6992.97**	33%
1	GOA NORTH	9981.95	2402.00	0.00	3654.99	16036.94	9622.96	1011.00	1847.99	2856.99	2037.99	4727.99	30%
2	GOA SOUTH	7018.91	92.00	644.00	590.99	8343.90	5005.94	877.99	1258.98	2134.98	1395.98	1474.98	43%
3	SOUTH GOA	1995.00	39.00	0.00	305.00	2340.00	1404.00	170.00	208.00	378.00	236.00	790.00	27%
iv)	**GUJARAT**	**122075.99**	**34645.04**	**0.00**	**33887.61**	**190608.64**	**181078.18**	**71378.85**	**8328.50**	**79707.35**	**9591.28**	**98859.94**	44%
1	Dang	5012.47	3405.68	0.00	56.85	8475.00	8051.24	1106.11	374.13	1480.24	439.84	6449.22	18%
2	Navsari	42515.72	6441.11	0.00	12669.86	61626.72	58545.37	22305.92	2115.73	24421.66	2267.43	33655.67	42%
3	Surat	25587.92	10164.26	0.00	11495.97	47248.13	44885.72	17527.44	1676.09	19203.53	1643.42	25464.50	43%
4	Tapi	13853.76	4503.72	0.00	5294.67	23652.14	22469.54	10931.36	683.33	11614.69	754.37	10680.92	52%
5	Valsad	35106.13	10130.27	0.00	4370.25	49606.65	47126.31	19508.01	3479.22	22987.23	4486.23	22609.64	49%
v)	**KARNATAKA**	**172767.71**	**30397.80**	**27214.05**	**13738.11**	**244117.63**	**157931.05**	**57536.95**	**11383.34**	**68920.28**	**12343.32**	**174237.41**	44%
1	BELAGAVI	4880.39	665.27	624.37	147.99	6318.02	5289.47	515.83	234.07	749.91	261.11	5541.08	14%
2	CHIKKAMAGALUR	1140.71	118.82	233.41	43.83	1536.78	1042.78	190.17	47.61	237.78	50.56	1296.04	23%
3	DAKSHIN KANNA	37391.84	1763.02	7172.59	3108.09	49435.53	29724.79	16064.17	2542.28	18606.44	2722.04	30649.33	63%
4	DHARWAD	4600.74	1382.35	2195.95	1043.53	9222.56	6435.72	4069.94	275.00	4344.93	333.15	4819.48	68%
5	HASSAN	2242.20	363.91	595.12	111.76	3312.98	2490.64	531.61	144.63	676.24	153.03	2628.34	27%
6	HAVERI	435.97	365.32	210.46	377.34	1389.08	1262.12	384.00	29.11	413.11	38.57	966.51	33%
7	KODAGU	6424.21	589.84	2770.62	611.07	10395.73	8606.47	2248.15	467.47	2715.61	602.10	7545.48	32%
8	SHIVAMOGGA	15644.83	1559.37	2236.39	858.29	20298.88	14506.57	4248.82	540.09	4788.91	568.05	15482.00	33%
9	UDUPI	42514.61	1630.28	5984.07	1707.41	51836.36	31349.69	9424.47	3699.39	13123.87	3954.44	38457.46	42%
10	UTTAR KANNADA	57492.21	21959.61	5191.07	5728.82	90371.70	57222.79	19859.78	3403.70	23263.48	3660.26	66851.68	41%
vi)	**KERALA**	**362958.98**	**4244.96**	**67159.82**	**112165.50**	**546529.30**	**493800.39**	**119047.10**	**140648.68**	**259695.79**	**0.00**	**0.00**	53%
1	Alappuzha	25735.62	95.67	7057.88	10845.55	43734.75	40284.16	3963.90	9605.50	13569.41	0.00	0.00	34%
2	Errnakulam	34205.07	359.60	7237.00	13539.26	55340.94	49806.85	8850.75	13133.62	21984.38	0.00	0.00	44%
3	Idukki	14466.76	201.18	3088.46	1803.55	19559.95	17603.96	6128.72	4333.25	10461.97	0.00	0.00	59%
4	Kannur	38374.23	0.00	0.00	6832.32	45206.54	40685.89	8729.53	9744.26	18473.79	0.00	0.00	45%
5	Kasargod	25896.41	761.95	0.00	4590.77	31249.13	28124.23	16213.65	6179.91	22393.55	0.00	0.00	80%
6	Kollam	23732.75	148.58	8902.07	3865.06	36648.48	33114.00	5326.25	11271.46	16597.71	0.00	0.00	50%
7	Kottayam	27883.64	116.03	6607.36	7008.47	41615.50	37453.94	5243.10	8360.61	13603.71	0.00	0.00	36%
8	Kozhikkode	28114.52	167.62	3990.51	1478.14	33750.78	30375.69	5037.74	12649.10	17686.84	0.00	0.00	58%
9	Malappuram	37316.48	355.03	5970.96	8533.24	52175.73	46958.15	10090.74	21466.25	31556.97	0.00	0.00	67%
10	Palakkad	26104.67	743.25	5567.52	30025.76	62441.19	56197.06	18850.14	13749.02	32599.15	0.00	0.00	58%
11	Pathanamthitta	18279.60	132.13	6336.76	3531.98	28280.46	25557.89	3925.02	5516.68	9441.71	0.00	0.00	37%
12	Thiruvananthapuram	19421.95	244.13	6548.70	3005.77	29220.56	26728.92	5370.86	11661.41	17032.27	0.00	0.00	64%
13	Thrissur	40968.57	917.06	5852.61	17052.02	64790.26	58646.12	21182.15	12604.37	33786.53	0.00	0.00	58%
14	Wayanad	2458.71	2.73	0.00	53.60	2515.04	2263.54	134.55	373.23	507.78	0.00	0.00	22%
vii)	**Maharashtra**	**166335.89**	**2466.47**	**12.22**	**19283.44**	**188098.07**	**178213.48**	**28253.47**	**7933.56**	**36187.04**	**17166.90**	**134228.94**	20%
1	Ahmednagar	56.82	6.21	8.60	24.22	95.86	91.06	65.75	6.54	72.29	7.27	24.27	79%
2	Dhule	251.08	70.58	0.00	146.88	468.54	442.45	205.52	12.08	217.60	41.71	199.31	49%
3	Kolhapur	2351.47	213.60	0.74	1458.82	4024.62	3819.85	1684.03	49.82	1733.85	56.76	2110.55	45%
4	Nandurbar	4.56	0.44	0.00	1.44	6.44	6.08	1.77	0.35	2.12	1.00	3.29	35%
5	Nashik	31236.18	857.88	0.00	2057.65	34151.71	32433.20	3359.43	571.04	3930.48	1774.72	28687.74	12%
6	Palghar	18786.87	239.16	0.00	3351.91	22377.95	21031.82	3632.58	874.12	4506.71	4250.54	13161.75	21%
7	Pune	2236.95	116.21	1.66	509.92	2864.74	2708.91	901.26	145.57	1046.83	204.15	1619.20	39%
8	Raigad	33553.19	381.95	0.00	5422.28	39357.44	37357.47	4185.92	2151.59	6337.51	5620.89	27550.62	17%
9	Ratnagiri	40749.43	117.32	0.00	2005.09	42871.85	40730.72	4997.51	1248.92	6246.43	1463.29	34220.21	15%
10	Sangli	43.54	4.07	0.00	13.36	60.96	57.82	18.83	2.95	21.78	4.17	34.66	38%
11	Satara	93.58	5.63	1.21	13.24	113.67	107.99	30.91	8.93	39.84	11.31	92.72	37%
12	Sindhudurg	21786.47	169.81	0.00	2066.00	24022.29	22790.80	6823.03	2156.24	8979.25	2328.59	13638.60	39%
13	Thane	15185.76	283.61	0.00	2212.62	17682.00	16635.32	2346.93	705.40	3052.33	1402.49	12886.01	18%
viii)	**Puducherry**	**244.73**	**0.00**	**27.50**	**0.00**	**272.23**	**245.01**	**0.00**	**167.78**	**167.78**	**405.00**	**5409.00**	68%
1	Mahe	244.73	0.00	27.50	0.00	272.23	245.01	0.00	167.78	167.78	405.00	5409.00	68%
ix)	**TAMILNADU**	**15419.44**	**15328.79**	**6238.99**	**10552.93**	**47540.20**	**42786.17**	**25151.51**	**4376.65**	**29528.16**	**5130.28**	**18452.10**	69%
1	Coimbatore	7165.26	2803.23	2758.01	6304.92	19031.49	17128.33	19316.15	2097.19	21413.34	2256.65	959.87	125%
2	Kanniyakumari	6541.72	12187.85	2992.64	3566.41	25288.62	22759.76	3839.08	2055.35	5894.43	2618.66	16302.03	26%
3	The nilgiris	1092.84	42.81	303.05	5.43	1444.14	1299.72	12.25	154.81	167.06	175.74	1111.72	13%
4	Theni	9.72	7.13	5.87	4.39	27.10	24.39	17.56	0.39	17.95	0.46	6.58	74%
5	Tirunelveli	81.40	69.56	19.85	41.49	212.29	191.06	135.96	9.36	145.32	11.15	44.01	76%
6	Tiruppur	528.32	217.90	159.51	630.14	1535.87	1382.28	1829.93	59.54	1889.46	67.60	27.86	137%
7	Virudhunagar	0.17	0.31	0.06	0.15	0.70	0.63	0.58	0.02	0.60	0.02	0.03	95%
8	(Blank)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	West flowing rivers South of Tapi Basin Total	**865689.87**	**89791.04**	**101626.58**	**194927.96**	**1252032.56**	**1077825.82**	**304177.33**	**177841.74**	**481653.68**	**49793.73**	**443281.64**	45%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
XIV	**Mahi basin**												
i)	**GUJARAT**	**140897.31**	**46368.67**	**0.00**	**55238.39**	**242504.37**	**230379.15**	**102366.26**	**12985.35**	**115351.61**	**13630.11**	**112433.58**	50%
1	Anand	15111.08	5832.08	0.00	6875.08	27818.23	26427.32	15360.57	1483.85	16844.41	1642.10	9202.07	64%
2	Arvalli	453.63	51.54	0.00	58.45	563.62	535.44	331.18	14.24	345.43	16.21	185.91	65%
3	Bharuch	6602.20	419.49	0.00	2808.14	9829.82	9338.34	4213.06	540.65	4753.71	599.68	4444.50	51%
4	Chhota udepur	568.20	432.52	0.00	780.29	1781.01	1691.96	863.05	54.84	917.89	64.67	756.01	54%
5	Dahod	22400.94	11003.36	0.00	7410.14	40814.44	38773.71	14370.73	3381.12	17751.85	4173.18	19722.71	46%
6	Kheda	1368.21	635.06	0.00	661.04	2664.31	2531.09	1294.55	143.44	1437.99	158.88	1056.14	57%
7	Mahisagar	19956.12	6148.74	0.00	8158.50	34263.39	32550.22	12155.85	1462.26	13618.11	1667.49	18507.53	42%
8	Panchmahal	19818.37	11119.77	0.00	9665.37	40603.51	38573.32	11362.21	2675.14	14037.35	3069.84	23738.86	36%
9	Vadodara	54618.55	10726.11	0.00	18821.38	84166.04	79957.74	42415.06	3229.80	45644.87	2238.06	34819.85	57%
ii)	**MADHYA PRADESH**	**57894.57**	**3472.30**	**0.00**	**12451.39**	**73818.26**	**69304.25**	**48618.73**	**4960.56**	**53579.28**	**6031.78**	**17207.37**	77%
1	Alirajpur	1046.01	28.53	0.00	91.19	1165.73	1070.11	433.89	154.46	588.35	160.67	452.38	55%
2	Dhar	16220.87	984.03	0.00	4909.64	22114.54	20826.95	15522.65	732.00	16254.65	886.54	5099.26	78%
3	Jhabua	20790.26	790.06	0.00	2374.82	23955.14	22153.51	9997.87	2672.53	12670.40	2798.50	8956.26	57%
4	Neemuch	429.06	25.35	0.00	100.81	555.22	527.46	472.91	26.26	499.17	28.04	22.58	95%
5	Ratlam	19406.44	1644.15	0.00	4974.28	26024.87	24723.61	22188.20	1375.24	23563.44	2157.94	2676.88	95%
6	Ujjain	1.94	0.17	0.00	0.65	2.75	2.61	3.21	0.08	3.28	0.11	0.00	126%
iii)	**Rajasthan**	**42915.56**	**3689.75**	**0.00**	**24550.43**	**71155.72**	**64554.00**	**48913.43**	**4528.13**	**53441.55**	**6125.59**	**14061.62**	83%
1	Banswara	11442.43	671.59	0.00	8804.14	20918.15	18953.42	8478.74	2047.09	10525.83	2776.19	7699.23	56%
2	Chittaurgarh	928.25	60.25	0.00	183.76	1172.26	1055.05	1592.90	40.30	1633.20	54.41	0.00	155%
3	Dungarpur	7779.36	773.65	0.00	4820.05	13373.05	12084.97	7209.66	708.51	7918.16	956.49	3918.90	66%
4	Pratapgarh	10287.99	955.90	0.00	3192.96	14436.85	13330.82	15080.50	385.74	15466.24	520.75	886.18	116%
5	Udaipur	12477.54	1228.36	0.00	7549.52	21255.41	19129.74	16551.63	1346.48	17898.11	1817.75	1557.31	94%
	Mahi basin Total	**241707.44**	**53530.72**	**0.00**	**92240.21**	**387478.35**	**364237.40**	**199898.41**	**22474.03**	**222372.44**	**25787.49**	**143702.57**	61%

Source: Central Ground Water Board, Faridabad

XV	**Sabarmati Basin**												
i)	**GUJARAT**	**329526.67**	**80117.57**	**0.00**	**66185.75**	**475807.71**	**452017.29**	**321167.23**	**17656.32**	**338823.55**	**18748.46**	**127145.57**	75%
1	Ahmedabad	34665.28	7934.01	0.00	8676.19	51275.48	48711.71	32597.76	3411.29	36009.05	2057.80	13544.18	74%
2	Anand	16772.43	10604.62	0.00	12782.70	40159.75	38151.75	16596.72	1823.87	18420.59	2017.19	19263.96	48%
3	Arvalli	54412.23	7001.58	0.00	6094.71	67508.52	64133.09	39423.60	1685.38	41108.97	1918.78	22537.91	64%
4	Banaskantha	4252.08	1070.76	0.00	272.27	5595.11	5315.35	3189.28	215.85	3405.13	218.79	1874.91	64%
5	Botad	5408.99	421.64	0.00	381.16	6211.80	5901.21	3369.74	180.90	3550.64	205.64	2298.69	60%
6	Gandhinagar	40861.21	5888.93	0.00	2731.67	49481.80	47007.72	51114.00	2263.70	53377.71	2498.00	0.00	114%
7	Kheda	35796.34	16420.87	0.00	16558.05	68753.00	65315.32	33501.05	3125.19	36626.24	3555.12	27791.14	56%
8	Mahesana	43038.78	8106.93	0.00	6836.57	57982.28	55083.16	63330.30	1562.25	64892.55	1694.92	569.03	118%
9	Mahisagar	2745.26	488.66	0.00	255.37	3489.29	3314.83	1674.05	189.74	1863.79	211.51	1400.62	56%
10	Rajkot	2223.09	1005.99	0.00	468.80	3697.89	3512.99	2126.01	91.98	2217.99	106.19	1270.14	63%
11	Sabarkantha	64738.39	15499.43	0.00	9099.67	89337.49	84870.60	57118.86	2331.63	59450.48	2654.10	24747.90	70%
12	Surendranagar	24612.60	5674.13	0.00	2028.59	32315.32	30699.55	17125.86	774.56	17900.42	1610.41	11847.08	58%
ii)	**Rajasthan**	**6495.03**	**517.55**	**0.00**	**3019.66**	**10032.24**	**9030.13**	**7385.31**	**699.33**	**8084.64**	**944.09**	**758.66**	90%
1	Dungarpur	1106.50	76.80	0.00	351.57	1534.87	1381.40	833.90	95.43	929.33	128.83	418.65	67%
2	Pali	8.85	0.24	0.00	0.81	9.90	9.32	9.23	0.44	9.67	0.60	0.00	104%
3	Sirohi	200.79	9.49	0.00	28.04	238.32	214.99	180.08	12.91	192.99	17.43	20.43	90%
4	Udaipur	5178.90	431.01	0.00	2639.24	8249.15	7424.41	6362.10	590.55	6952.65	797.24	319.58	94%
	Sabarmati Basin Total	**336021.71**	**80635.12**	**0.00**	**69205.42**	**485839.95**	**461047.42**	**328552.54**	**18355.65**	**346908.19**	**19692.55**	**127904.23**	75%

Source: Central Ground Water Board, Faridabad

Table 17: DYNAMIC GROUND WATER RESOURCES OF UNCLASSIFIED BASINS OF INDIA (in Ham) as on March 2017

Sl. No.	BASIN/STATE/DISTRICT	Recharge Due to Rainfall during monsoon Season	Recharge Due to Other Sources during monsoon Season	Recharge Due to Rainfall during non-monsoon Season	Recharge Due to Other Sources during non- monsoon Season	Total Annual Recharge	Annual Extractable Resources	Extraction due to Irrigation Needs	Extraction due to Domestic and Industrial Needs	Total Annual Extraction from all needs	Projected Demand for Domestic needs as on Year 2025	Allocation for Future Use	State of Extraction (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
XVI	**West flowing rivers of Kutch and Saurashtra including Luni Basin**												
i)	**Daman_Diu**	**381.31**	**18.51**	**0.00**	**36.09**	**435.91**	**392.41**	**0.00**	**302.64**	**8.33**	**46.28**	**357.24**	2%
1	Diu	381.31	18.51	0.00	36.09	435.91	392.41	0.00	302.64	8.33	46.28	357.24	2%
ii)	**GUJARAT**	**858360.16**	**146849.57**	**0.00**	**105152.87**	**1110242.16**	**1054729.58**	**782057.24**	**27154.48**	**809211.73**	**36794.55**	**285697.55**	77%
1	Ahmedabad	4572.09	829.66	0.00	1169.24	6570.99	6242.44	3304.44	258.08	3562.52	422.20	2477.20	57%
2	Amreli	104296.26	11429.91	0.00	11215.04	126941.24	120594.19	73779.96	2342.63	76122.60	2597.97	43864.84	63%
3	Anand	31.14	16.03	0.00	15.54	62.71	59.58	32.19	3.49	35.68	3.86	23.00	60%
4	Banaskantha	105632.34	25611.61	0.00	13495.14	144739.10	137502.15	166065.12	4260.52	170325.65	4623.21	9435.87	124%
5	Bhavnagar	59385.81	12066.46	0.00	9558.28	81010.53	76960.00	47003.90	3078.75	50082.67	4247.36	25246.94	65%
6	Botad	25470.17	3277.56	0.00	2511.22	31258.94	29695.99	18015.36	814.41	18829.76	1031.36	10527.11	63%
7	Devbhumi Dwarka	25258.20	3282.38	0.00	1585.15	30125.72	28618.95	17358.13	1047.82	18405.95	1350.46	9753.19	64%
8	Gir Somnath	42245.05	4023.32	0.00	5160.95	51429.32	48857.85	28639.75	1302.45	29942.20	3492.33	16530.40	61%
9	Jamnagar	65317.09	10246.86	0.00	3255.08	78819.04	74878.07	45416.80	1953.82	47370.63	2537.09	26631.12	63%
10	Junagadh	87517.34	8133.45	0.00	8460.06	104110.87	98905.33	61209.86	2332.96	63542.81	2731.17	34614.35	64%
11	Kachchh	58048.24	15797.71	0.00	12931.52	86656.99	82324.16	66989.81	2200.59	69190.41	3844.48	13525.01	84%
12	Mahesana	45266.72	6725.41	0.00	4965.35	56957.46	54109.58	58948.80	1556.25	60505.05	1688.08	331.67	112%
13	Morbi	48353.66	4433.05	0.00	5808.70	58595.41	55665.64	32588.80	1135.66	33724.45	1713.00	21193.50	61%
14	Patan	21368.79	11910.36	0.00	5710.22	38989.37	37039.90	36592.50	869.13	37461.63	968.00	496.89	101%
15	Porbandar	18167.95	2412.85	0.00	1108.33	21689.14	20604.69	14129.36	560.68	14690.03	1007.71	5406.71	71%
16	Rajkot	113522.58	22893.67	0.00	16439.62	152855.88	145213.09	90945.29	2793.91	93739.18	3337.81	50513.91	65%
17	RANA AND KUTCH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	Sabarkantha	8.79	1.23	0.00	0.44	10.46	9.94	4.04	0.79	4.83	0.90	4.89	49%
19	Surendranagar	33897.94	3758.05	0.00	1762.99	39418.98	37448.04	21033.14	642.55	21675.69	1197.59	15120.96	58%
ii)	**Rajasthan**	**200492.42**	**5034.90**	**1320.39**	**24306.26**	**231153.99**	**209864.34**	**303911.37**	**28274.81**	**332186.21**	**38170.99**	**7046.54**	158%
1	Ajmer	7853.04	327.44	0.00	994.47	9174.96	8294.88	12506.81	1593.42	14100.24	2151.12	0.00	170%
2	Barmer	23462.21	810.67	896.51	2181.71	27351.09	24897.97	27251.22	3916.66	31167.88	5287.49	807.87	125%
3	Bhilwara	4.98	0.66	0.00	1.72	7.36	6.63	9.77	0.68	10.46	0.92	0.00	158%
4	Jaisalmer	510.86	2.85	0.00	8.57	522.28	470.06	1548.94	278.55	1827.49	376.04	0.00	389%
5	Jalor	41635.14	1163.34	0.00	10449.11	53247.60	48032.85	80857.74	4419.60	85277.35	5966.46	1226.27	178%
6	Jodhpur	30452.92	428.97	10.40	1319.18	32211.48	29135.72	54745.71	8512.94	63258.66	11492.47	2388.37	217%
7	Nagaur	21856.40	156.24	413.34	468.87	22894.85	20707.41	40157.29	4947.11	45104.40	6678.60	0.00	218%
8	Pali	42896.05	1150.61	0.00	5740.43	49787.08	45547.72	54079.44	3093.10	57172.54	4175.68	1022.26	126%
9	Rajsamand	634.98	31.61	0.00	133.91	800.50	720.46	740.73	110.18	850.91	148.74	0.00	118%
10	Sikar	8.76	0.25	0.14	0.57	9.71	8.74	15.13	1.94	17.07	2.62	0.00	195%
11	Sirohi	30747.70	928.54	0.00	2809.69	34485.93	31446.88	31438.55	1374.61	32813.16	1855.72	1597.59	104%
12	Udaipur	429.39	33.71	0.00	198.05	661.15	595.02	560.04	26.01	586.05	35.12	4.18	98%
	West flowing rivers of Kutch and Saurashtra including Luni Basin Total	**1059233.88**	**151902.98**	**1320.39**	**129495.23**	**1341832.06**	**1264986.33**	**1085968.62**	**55731.93**	**1141406.27**	**75011.82**	**293101.33**	90%

Source: Central Ground Water Board, Faridabad

Glossary of Terms

Glossary of Terms

Active (usable) storage capacity	The total amount of reservoir capacity normally available for release from a reservoir below the maximum storage level. It is total or reservoir capacity minus inactive storage capacity. More specifically, it is the volume of water between the outlet works and the spillway crest.
Alluvium	Sediments deposited by erosion processes, usually by streams.
Area Sown more than once	This represents the areas on which crops are cultivated more than once during the agricultural year. This is obtained by deducting `Net Area Sown' from `Total Cropped Area'.
Area under Non-agricultural Uses	This includes all lands occupied by buildings, roads and railways or under water, e.g. rivers and canals and other lands put to uses for other than agricultural purposes.
Barren and Un-culturable Land:	This includes all barren and unculturable land like mountains, deserts, etc. land whether such land is in isolated blocks or within cultivated holdings which cannot be brought under cultivation, except at an exorbitant cost, is classified as unculturable land
Basin boundary	The topographic dividing line around the perimeter of a basin, beyond which overland flow (i.e., runoff) drains away into another basin.
Bed load	Sand, silt, gravel, or soil and rock detritus carried by a stream on or immediately above its bed. The particles of this material have a density or grain size such as to preclude movement far above or for a long distance out of contact with the stream bed under natural conditions of flow.
Bed material	The sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.
Biochemical Oxygen Demand (B.O.D.)	The measure of oxygen required for natural oxidation of organic matter with the aid of bacteria. The test is made by taking duplicate samples of water in two completely filled bottles, one of which is sealed and kept stored for 5 days. The dissolved oxygen content of the first sample gives the biochemical oxygen demand, or shortly B.O.D. value. The B.O.D. value of surface waters may be 1 to 10 p.p.m., and for deep well water it would be much less.
Coliform Group	All waters contain bacteria, vast majority of which are perfectly harmless. One organism, bacillus Coli, found in the intestines of men and warm-blooded animals, which in itself is usually quite and may therefore be regarded as danger signal. The group of bacteria of intestinal origin is known as coliform group. The bacilli of this group ferment lactose with gas formation. Since organisms of the coliform group normally live longer in water than other bacteria, absence of such organisms indicates that the water is safe. Also this group is more

	resistant to treatment than pathogens, their existence or otherwise gives a useful indication of the efficiency of water treatment methods.
Coliform Index	The probable number of coliform organisms present in 100 ml. is known as coliform index. If out of 5 portions be isolated from one sample only, the number of coliforms would be considered to be 1 in 50 ml. or 2 in 100 ml., which would be the coliform index, assuming that the gas formation was due to one coliform only.
Culturable Waste Land	This includes land available for cultivation, whether not taken up for cultivation or taken up for cultivation once but not cultivated during the last five years or more in succession including the current year for one reason or the other. Such lands may be either fallow or covered with shrubs and jungles which are not put to any use. They may be assessed or unassessed and may lie in isolated blocks or within cultivated holdings.
Current Fallows	This represents cropped area, which are kept fallow during the current year. For example, if any seeding area is not cropped against the same year it may be treated as current fallow.
dam	Any artificial barrier which impounds or diverts water. A dam is generally considered hydrologically significant if it is (i) One and one quarter feet (0.4 meters) or more in height from the natural bed of the stream and has a storage of at least 15 acre-feet, or (ii) has an impounding capacity of 50 acre-feet or more and is at least six feet (2 meters) above the natural bed of the stream.
Discharge	The quantity of water flowing across a section of a channel in a unit time is called the discharge. It is measured in cubic feet or meters per second, briefly called cusecs and cumecs respectively and is equal to the area of section X average velocity. Common units are cubic feet per second (cfs), second-day feet (sdf), and cubic meter per second (cumecs). Two types of discharges are often measured and recorded: (i) instantaneous discharge: the discharge at a particular instant of time. (ii) mean discharge: the arithmetic mean of individual discharges during a period of time. Discharges given are daily observed discharges commencing at 08.00 hrs.
Drainage area	An area around a river and rainfall of which flows into the river. Also known as watershed, catchment area and drainage basin.
Drainage basin	A part of the earth's surface which is occupied by a drainage system which consists of a surface stream with all its tributaries and impounded bodies of water. Also known as watershed, catchment area, and drainage area.

Fallow Land	This includes fallow land other than current fallows and current fallow land of land use classification which are explained below.
Fallow Lands other than Current Fallows	This includes all lands, which were taken up for cultivation but are temporarily out of cultivation for a period of not less than one year and not more than five years.
Forest	This includes all lands classified as forest under any legal enactment dealing with forests or administered as forests, whether state-owned or private, and whether wooded or maintained as potential forest land. The area of crops rose in the forest and grazing lands or areas open for grazing within the forests remains included under the forest area.
Gross capacity	The maximum volume of water that can be stored in a reservoir.
Gross reservoir capacity	The total amount of storage capacity available in a reservoir for all purposes from the streambed to the normal water or normal water or normal pool surface level. It does not include surcharge, but does include dead storage.
Ground water	Water within the earth that supplies wells and springs; water in the zone of saturation where all openings in rocks and soil are filled, the upper surface of which forms the water table. Also termed Phreatic water.
Ground water runoff	That part of the runoff which has passed into the ground, has become ground water, and has been discharged into a stream channel as spring, or seepage water.
Hardness	Hardness of water is generally caused by the presence of salts of calcium and magnesium. Hardness due to the presence of bicarbonates of calcium and magnesium is called temporary hardness. Permanent hardness is caused by the presence of sulphates and chlorides of these metals, and is not removable by boiling. The sum of these two hardness is called total hardness. It is expressed in terms of calcium carbonate. Since one gallon of water weighs 70,000 grains, degrees of hardness can be converted in p.p.m. by multiplying by 14.3. A water having 50 to 100 p.p.m. hardness is called soft water, one with 100 to 200 p.p.m. Moderately hard, and that with 200 to 300 p.p.m. hard. Hardness of 80 to 90 p.p.m. is considered to be the best.
Headwater basin	A basin at the headwaters of a river. All discharge of the river at this point is developed within the basin.
Hydrogen-ion Concentration (pH)	Acidity and Alkalinity determinations is the measures of acid and alkali present, while the H-ion concentration determines the strength of the acid and alkali in water. An ion is an atom or a group of atoms that carries an electric charge.

	The H-ion concentration is expressed in terms of logarithm of the reciprocal of the H-ion concentration. This term is called the pH value (potential of Hydrogen). Log 1/10-7 = 7, so that pH value 7 denotes neutrality while values above 7, signify alkalinity and those below 7, acidity.The determination of pH value provides information concerning the corrosive character of water. Waters with pH between 7.4 and 8.4 are practically inactive. Waters with pH above 8.6 or 8.8 are likely to cause precipitation of calcium carbonate in the distribution system, while waters over-carbonate with CO2 may dissolve the slight carbonate film on the inside of mains and start active corrosion, depending upon the pH value. When the pH of natural waters is below 7 it may be found necessary to add a small amount of soda ash or lime to the water before admittance to the mains, as otherwise corrosion may be caused.
Hydrologic Cycle	Water is lost to the atmosphere as vapour from the earth, which is then precipitated back in the form of rain, snow, hail, dew, frost, etc. The process of evaporation and precipitation which combines forever and thereby maintaining a balance between the two is called Hydrologic Cycle.
Hydrologic unit	A geographical area representing part or all of a surface drainage basin or distinct hydrologic feature such as a reservoir, lake, etc.
Inactive storage Capacity	The portion of capacity below which the reservoir is not normally drawn, and which is provided for sedimentation, recreation, fish and wildlife, aesthetic reasons, or for the creation of a minimum controlled operational or power head in compliance with operating agreements or restrictions.
Inches of runoff	the volume of water from runoff of a given depth over the entire drainage.
Irrigated area	The gross farm area upon which water is artificially applied for the production of crops, with no reduction for access roads, canals, or farm buildings.
Irrigation efficiency	The percentage of water applied that can be accounted for in soil moisture increase for conjumtive use.
Irrigation requirement	The quantity of water, exclusive of precipitation, that is required for crop production. It includes surface evaporation and other economically unavoidable wastes.
Land under Miscellaneous Tree Crops, etc	This includes all cultivable land which is not included in `Net area sown' but is put to some agricultural use. Lands under Casuarinas trees, thatching grasses, bamboo bushes and other groves for fuel, etc. which are not included under `Orchards' are classified under this category.

Live capacity	The minimum volume of water required for maintaining flow of water from the Reservoir. It is the total amount of storage capacity available in a reservoir for all purposes, from the dead storage level to the normal water or normal pool level surface level. Does not include surcharge, or dead storage, but does include inactive storage, active conservation storage and exclusive flood control storage.
Long term storage dams	Reservoirs used for recreational use or storage of irrigation, municipal or industrial water. Because water is impounded on a "permanent" basis, the design of these dams is more complex than for tailings or flood control detention dams. A long term storage dam may include an impermeable core surrounded by shell material; have many types of drains and filters, outlet works, with gates and valves, seepage collection boxes, and possibly several spillways. The capacity of the spillway is dependent upon the downstream hazard potential.
Mean annual rainfall	Mean annual rainfall is usually worked out as a simple average of the total rainfall of various years.
Mean depth	The average depth of water in a stream channel or conduit. It is equal to the cross-sectional area divided by the surface width.
Moisture equivalent	The ratio of (1) the weight of water which the soil, after saturation, will retain against a centrifugal force 1,000 times the force of gravity, to (2) the weight of the soil when dry. The ratio is stated as a percentage.
Net Area Sown	This represents the total area sown with crops and orchards but area sown more than once in the same year is counted only once.
Net rainfall	The portion of rainfall which reaches a stream channel or the concentration point as direct surface flow.
Normal year	The year during which the precipitation or stream flow approximates the average for a long period of record.
Not available for cultivation	This includes area under non-agricultural uses and barren & unculturable land which are briefly described below.
Other Cultivated land excluding fellow land	This includes (i) permanent pastures and other grazing land (ii) land under miscellaneous trees, crops and groves not included in net area and (iii) culturable waste land which are briefly described below.
Peak discharge	Rate of discharge of a volume of water passing a given location. (Usually in cubic feet per second.)
Permanent Pastures and other Grazing Lands	This includes all grazing lands whether they are permanent pastures and meadows or not. Village common grazing land is included under this head.

Point discharge	Instantaneous rate of discharge, in contrast to the mean rate for an interval of time.
Point precipitation	Precipitation at a particular site, in contrast to the mean precipitation over an area.
Reporting Area for Land Utilisation Statistics	The Reporting area stands for the area for which data on land use classification of area are available. In areas where land utilization figures are based on land records, reporting area is the area according to village papers, i.e. the papers prepared by the village accountants. In some cases, the village papers may not be maintained in respect of the entire area of the State. For example, village papers are not prepared for forest areas for which no village paper exists for which ad-hoc estimates of classification of area etc. framed to complete the coverage.
River Basin	Drainage area of a river and its tributaries.
River gauge datum	The arbitrary zero datum elevation which all stage measurements are made from.
Runoff	Water which is not absorbed by the soil and flows to lower ground, eventually draining into a stream, river, or other body of water. It is that part of precipitation that flows toward the streams on the surface of the ground or within the ground. Runoff is composed of base flow and surface runoff.
Runoff/ potential	Runoff/ potential of a river for a specified period at a site is the total volume of water flow/passed from/through the site during the specified period. It is the notional depth of water in mm over the catchment, equivalent to annual runoff (in M.Cum.)/Catchment Area (km2)* 1000 and calculated at the discharge measurement station.
Second-day feet	The volume of water represented by a flow of one cubic foot per second for 24 hours; equal to 84,000 cubic feet. This is used extensively as a unit of runoff volume. Often abbreviated as SDF.
Sediment storage capacity	The volume of a reservoir planned for the deposition of sediment.
Soil moisture	Water contained in the upper regions near the earth's surface.
Stage	The level of the water surface above an established "zero" plane or datum at a given location.
Surface runoff	The runoff that travels overland to the stream channel. Rain that falls on the stream channel is often lumped with this quantity.
Surface water	Water that flows in streams and rivers and in natural lakes, in wetlands, and in reservoirs constructed by humans.

Temperature	The in-situ temperature in degree centigrade by thermometer is recorded in terms of water intended use, the treatment to remove impurities and its transport.
Total Cropped Area	This represents the total area covered with crops, i.e. the sum total of areas covered by all the individual crops; areas sown with crops more than once during the year being counted as separate areas for each crop. It is also known as Gross Cropped Area.
Tributary	A stream or river whose water flows into a larger stream or river.
Watershed	The sum total of all the land and smaller bodies of water which drains into a particular stream or river.
Zero R.L. of gauge	The Zero R.L. of a gauge is the datum level fixed for a given site, which is kept 1 or 2 m lower than the lowest water level recorded in a perennial stream. In a no perennial stream, it is kept 1 or 2 m lower than the lowest bed level of the stream.

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ABBREVIATIONS AND SYMBOLS

-	:	Anion
+	:	Cation
^{0}C	:	Degree Centigrade
BCM	:	Billion Cubic Meter
BOD	:	Bio-Chemical Oxygen Demand
cumec	:	Cubic Meter per Second
CWC	:	Central Water Commission
DO	:	Dissolved Oxygen
G	:	Gauge Sites
GD	:	Gauge & Discharge sites
GDQ	:	Gauge, Discharge and Water Quality Sites
GDS	:	Gauge, Discharge & Sediment sites
GDSQ	:	Gauge, Discharge, Sediment and Water Quality Sites
GSC	:	Gross Storage capacity
IC	:	Installed Capacity (Mega Watt)
LSC	:	Live Storage capacity
m	:	Meter
max	:	Maximum
MCM	:	Million Cubic Meter
mg/l	:	Milligram per Litre
min	:	Minimum
mm	:	Millimeters
MPN	:	Most Probable Number
N.A.	:	Not Applicable
pH	:	Negative logarithm of hydrogen ion concentration
ppm	:	Part per million
PSS	:	Pumped Storage Schemes
RSC	:	Residual Sodium Carbonate
SAR	:	Sodium Absorption Ratio
Sq Km	:	Square Kilometers
WQ	:	Water Quality
	:	Under Construction Structures (In the River Flow Line Diagram)
	:	Operational Structures (In the River Flow Line Diagram)

ABBREVIATIONS AND SYMBOLS

pH_Gen	:	Negative logarithm of hydrogen ion concentration - General
B	:	Boron
Ca	:	Calcium
Cl	:	Chloride
CO_3	:	Carbonate
F	:	Fluoride
Fe	:	Iron
HCO_3	:	Bicarbonate
K	:	Potassium
Mg	:	Magnesium
Na	:	Sodium
NH_3-N	:	Ammonia Nitrogen
NO_2-N	:	Nitrite Nitrogen
NO_3-N	:	Nitrate Nitrogen
SiO_2	:	Silica
SO_4	:	Sulphate
As	:	Arsenic
Cd	:	Cadmium
Cr	:	Chromium
Cu	:	Copper
Hg	:	Mercury
Ni	:	Nickel
Pb	:	Lead
Zn	:	Zinc
%	:	Percentage

References:

Website address of the following information:

- Water Year Book, Sediment Year Book and Water Quality Year Book
  http://www.cwc.gov.in/hydro_15-16

- Land use statistics (Table-14,15, 16)
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- Basin Reports (Table-14,15, 16)
  http://indiawris.gov.in/wris/#/Basin

- River Basin Atlas of India
  http://indiawris.gov.in/wris/#/RiverBasin