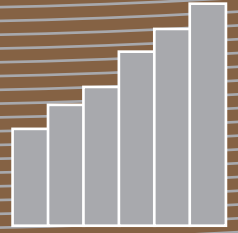


# Green Voice

Jul-Sep 2016

Quarterly Newsletter



## CMS ENVIS

Newsletter on  
Environment & Media

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THEME

# राज्यद्वारा र्ग इंदीव

Compiled & Edited by: CMS Envis Team



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# The main features of GREEN VOICE are:

**RESEARCH PAPER** scholarly written paper contains original research results or reviews existing results or show a totally new invention related with theme

**COLUMN** recurring piece or article in a newspaper, magazine or other publication accordance with the theme

**IN BLACK AND WHITE** some of the leading environmental news coverage in the print media for over a quarter

**FACETS** profile of a person who has contributed significantly to environment awareness through media tools

**TALK OVER** exclusive interviews with people actively engaged in environment advocacy such as filmmakers, journalists, photographers etc.

**NGO VIGNETTES** profile of an NGO or civil society organisation also in accordance with the theme

**OPEN WINDOWS** useful website links in accordance with the theme

**ON AIR** media update on programmes being aired by various channels

**VIEWPOINT** article by an expert on some contemporary issue

**FEATURE** focuses on particular people, places, and events, and it goes into great detail regarding concepts and ideas of specific issues

**MEDIA ANALYSIS** media trend analysis of environment news - quarterly

**LATEST GREEN FILMS** regular updates on fascinating films by Indian filmmakers on environment and wildlife

**BOOKS** latest books and publications on the theme of the newsletter

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## Environment calendar

### January

4- Oil Conservation Week  
15 – Oil Conservation Fortnight  
30- National Cleanliness Day

### February

2- World Wetlands Day  
28- National Science Day

### March

2-4 World Sustainable Day  
21- World Forestry Day  
22 - World Water Day  
23 -World Meteorological Day

### April

5- National Maritime Day  
7- World Health Day  
22- World Earth Day

### May

11- International Migratory Day  
22 - International Biodiversity Day  
31 - World No Tobacco Day

### June

5 - World Environment Day  
8 - World Ocean Day  
17 - World Day to Combat Desertification and Drought

### July

11 – World Population Day  
28- World Nature Conservation Day

### August

6- Hiroshima Day  
9 – Nagasaki Day  
9 – International Day of the World Indigenous people

### September

16- World Ozone Day  
28 - Green Consumer Day

### October

2-8 Wild Life Week  
4 - World Animal welfare Day  
5 - World Habitat Day  
10 – International Day for Natural Reduction  
16 – World Food Day

### November

6- International Day for preventing the Exploitation of the Environment in War and Arm Conflict  
10 – World science Day  
21 – World Television Day

### December

2– Bhopal Tragedy Day/ National Pollution Day  
11- International Mountain Day  
14 National Energy Conservation Day

# About the Theme



## List of all the major rivers of India: Names, Origin and Length

By Archana Venkatraman

Rivers in India do not just play a big role in the agriculture and economy of the country. They are also culturally important with many considering some rivers such as the Ganges very holy. All the major rivers of India begin their journeys at one of the three main watersheds – The Himalaya and Karakoram mountain ranges (Northern India); the Sahyadri or the Western Ghats (Western India); or the Vindhya and Satpura mountain ranges (Central India). Most of the major rivers of India end up joining the Bay of Bengal or the Arabian Sea.

### River Ganga near its origin

The Himalaya and Karakoram Glacier Rivers include:

- Ganga (Ganges)
- Brahmaputra
- Indus (Sindhu)

Ganga is the most sacred river of India and is known around the world for its significance of purity in the Hindu culture. The Ganga and Indus Basin are themselves major river systems featuring 16 important Indian rivers (10 rivers in Ganga basin and 6 major rivers in the Indus basin).

The Ganga River System includes the following rivers (10 major rivers plus Damodar river and Hugli river):

Rivers	Length (KM)	Origin	End
Ganga	2,525	Gangotri Glacier (Bhagirathi), Uttarakhand	Bay of Bengal
Yamuna	1,376	Yamunotri Glacier, Uttarakhand	Merges with Ganga at Allahabad (Triveni Sangam - Kumbh Mela spot)
Brahmaputra	1,800	Himalayan Glacier in Tibet, but enters India in Arunachal Pradesh	Merges with Ganga and ends in Bay of Bengal
Chambal	960	Tributary of Yamuna river, starting at Madhya Pradesh	Joins Yamuna river in UP
Son	784	Tributary of Ganga, starting at Amarkantak, Madhya Pradesh	Joins Ganga just above Patna - also considered part of Vindhya river system
Gandak	630	Nepal; Ganges tributary at Indo-Nepal border (Triveni Sangam)	Joins Ganga near Patna
Kosi	720	Starts from Bihar near Indo-Nepal border	Joins Ganga near Katihar district of Bihar
Betwa	590	Tributary of Yamuna, rises at Vindhya region, MP	Joins Yamuna at Hamirpur in UP
Gomti	900	Tributary of Ganga, starting at Gomati Taal, UP	Joins Ganga in Varanasi district
Ghaghra	1080	Himalayan Glacier in Tibet, tributary of Ganga	Joins Ganga in Bihar
Hugli (Hooghly)	260	Tributary of Ganga near West Bengal	Merges with Ganga at Bay of Bengal
Damodar	592	Tributary of Hugli near Chandwar, Jharkhand	Merges with Hugli in West Bengal

Although Hugli and Damodar rivers play a very important role in shaping the local civilisation and local economy, they are not considered as the most important rivers of the Ganga river system.

**The Indus River System includes the following 6 major rivers:**

Rivers	Length (KM)	Origin	End
Indus	3180	Originates in Tibetan plateau, Enters India in J&K	Merges into Arabina sea near Sindh
Chenab	960	Upper Himalayas in the Spiti district of Himachal Pradesh	Merges with Indus
Jhelum	725	Tributary of Chenub river, Punjab	Merges with Chenab at Jhang (Pakistan)
Ravi	720	Starts from Bara Bhangal, Kangra district, Himachal Pradesh	Joins Chenab in Pakistan
Sutlej	1500	Tributary of Indus river, originates at Rakshastal, Tibet	Meets Beas river in Pakistan and ends at Arabian sea
Beas	470	Rises at Himalayas in central Himachal Pradesh	Joins Sutlej river in Punjab, India

**Western Ghats Rivers:**

Rivers	Length (KM)	Origin	End
Kaveri	765	Talakaveri in Western Ghats in Karnataka	Ends in Bay of Bengal
Krishna	1400	Originates in the Western Ghats near Mahabaleshwar in Maharashtra	Ends in Bay of Bengal near Andhra Pradesh
Godavari	1465	Starts in Maharashtra and passes through 7 Indian states	Empties in Bay of Bengal
Tungabhadra	531	Tributary of Krishna river starting at Karnataka	Joins Krishna river along the border of Telangana and Andhra Pradesh

**Vindhya and Satpura Ranges rivers:**

Rivers	Length (KM)	Origin	End
Tapti	724	Rises in Eastern Satpura Ranges, Madhya Pradesh	Empties into Gulf of Khambat, Gujarat
Mahi	580	Rises in Madhya Pradesh	Flows into Arabian sea from Gujarat
Narmada	1315	Starts from Amarkantak, Madhya Pradesh	Drains into Arabian sea via Gulf of Cambay

**Other Important notes on Indian rivers to remember:**

- River Saraswati is a mythical river and is part of the Hindu triveni Sangam mythology of the confluence of Ganga, Yamuna and Saraswati rivers. Saraswati river is thought to be flowing under the ground and meeting Ganga and Yamuna at the Kumbh mela spot.
- Meghna a major river in Bangladesh is a tributary if Indian Brahmapura river and also empties in Bay of Bengal.
- River Tapi is a river in Thailand and is not to be confused with Indian river Tapti (Tapati).

<http://www.indianewsbulletin.com/names-and-details-of-all-major-rivers-of-india-ganga-yamuna-brahmaputra-godavari-narmada-krishna-etc>



## India's Water Resources and Population – Need for Interlinking of Rivers and efficient Water Management

**Dr. R. K. Sivanappan**

*(Ex-Director, Water technology Centre, Ex-Dean Agriculture Engineering College and research Institute, Tamilnadu Agricultural University, Coimbatore)*

### Introduction:

India is endowed with plenty of water and land resources. India's land area is about 2.5% of the world, Water Resources is 4% of global availability and the population is about 17% of the World. The available area is about 165 M.Ha. which is second highest in the World and similar to that of Population. In 1990's, about 65% of the population of India comprised of cultivators (farmers) and agricultural labours indicating the country dependence of agriculture ie land and water. Therefore the needs for water resources development for over all social and economic development were duly recognized from the very beginning.

India has abundant water resources, but water problem is very serious in many States. This year (2016) Water Problem / Scarcity was noticed in about 10 States i.e Maharashtra, Rajasthan, Karnataka, Telungana, Anadrapradesh, Madyapradesh etc., About 32 crores of the population are affected even to get drinking water. As a scientist working in this field for more than 60 years, I was warning /telling for the last 30-40 years that water problem in India is a man made problem and not the fault of the Nature. India gets an annual rainfall of 1150 mm as compared to the world average of 840 mm and about 400 mm is in Israel. Israel is managing the water successfully where as in Cherapunchi, India where the rainfall is about 11,000 mm, getting water is a problem for 2/3 months before the commencement of monsoon every year.

Water is most crucial natural resources and the availability greatly influence the health of people and development of that area. According to the standard definition; for water availability from 1000m<sup>3</sup> /per capita / year to 1700 m<sup>3</sup>/ capita / year shortage will be local.. Below 1000m<sup>3</sup>/per capita/year, water supply begins to hamper health, economic

development and human well being. At less than 500m<sup>3</sup> / per capita/ year water supply is a primary constraint to life and countries experience absolute scarcity. The 1000m<sup>3</sup> /per capita/year has been accepted as a general indicator of water scarcity by World Bank and other agencies.

### Water Resources:

In the world also water resources are abundant. The available water is sufficient even if the population of the world is increased to 25 billion (i.e 3 to 4 times of the present population). In India; the total available water is sufficient for a population of 1650 million (1500m<sup>3</sup> / per capita/ year).

River basins being the basic hydrological unit for assessment of water resources of the country. The entire country has been divided into 20 basins; Comprising of 12 major basins having a catchment area of 20,000 km<sup>2</sup> and the remaining 8 basins are medium and small.

The National Commission for integrated Water resources Development plan has assessed the countries water resources as 195.29 MHM in 1999. According to Central Water Commission, the utilizable water resources in all the 20 basins is 69 MHM which is about 35% of the total surface water. This water will meet irrigation needs for a cropped area of 76 MHa. The inter basin transfer proposed by the National Water Development Agency (NWDA) envisage additional utilization of about 20 – 25 MHM water. Also according to a very preliminary study about 16 MHM of water resources can be additionally utilized thro' artificial recharge of ground water totalling about 40MHM.

The latest assessment of replenishable ground water resource has been made as 43.20 MHM in the year 1994 – 95 by the Central Ground Board. The utilizable ground water has been assessed as 39.56 MHM (7 MHM for the domestic and industrial uses and 32.56 MHM for irrigation) which can irrigate about 64 MHa. The total irrigation is about 140 M.Ha (SW=76 M.Ha, & G.W = 64 MHa). The basin wise details of various water resources and their utilization components are given in Table1.

The assessed gross available water and utilizable water;

River flow (surface water) + ground water	=195.29 + 43.20 = 238.49 MHM
The assessed utilizable water	= 69.00 + 39.56 =108.60 MHm

Based on population of India from 1991-2050 (expected) the gross availability of water and utilization water resources per capita / year are given in Table 2

The utilizable water resources per capita per year various from 3020 m<sup>3</sup> in Narmadai basin and about 180 m<sup>3</sup> in sabarmathi basin. Out of 20 basins 4 basins had more than 1700 m<sup>3</sup> / p/y utilizable water resources, while 9 basins had between 1000-1700 m<sup>3</sup>, 5 basins between 500-1000 m<sup>3</sup> and 2 basins had less than 500 m<sup>3</sup> in the year 1991 when the population of India was 851 million. The population in 2050 is expected to reach about 1650 million and the food grain requirements of the country may be around 550-600 metric tones, including for losses in storage and transportation, seed requirements and carry over for years of monsoon failures (allowances of 15%) etc.

The total storage build up in various basins thro' major and medium projects upto 1995 is about 17.37 MHM.. The major and medium under constructions and identified would account for 7.54 MHM and 13.23 MHM respectively. The total being 38.15 MHM After taking into account the minor storage structures including tanks / ponds (about 4 mhm) the total storage capacity would be about 42 MHM.. This account for the populations of 1210 million in the storage capacity created in the country per person comes to about 350 m<sup>3</sup> compared to USA 5961 m<sup>3</sup>, China 2486 m<sup>3</sup> and soon. In this connection, it is not out of place to mention that there are about 45000 large dams in the world of which 46% is in China, 14% in USA, only 9% in India, Japan and Spain are having 6% and 3% respectively. The above facts indicate that India's water storage capacity and dams constructed are very meager compared to various countries the world taking into consideration of the population.

From the data / details in Table 1 & 2, it is seen that even the entire surface water and ground water available in the country is taken into account i.e. 238.50 MHM for the Physical population of 1650 million in 2050, the per capita availability of water per year comes to 1450 M<sup>3</sup> which is less than 1700 and this indicates water shortage and the country will

face water stress condition according to World bank / U.N norms.. If the utilizable water alone is taken into consideration (108.60 MHM) for the projected population of 1650 million in 2050, per capita water is 680 M<sup>3</sup> which is less than 1000m<sup>3</sup>/P/Y and this indicates the country will face severe water scarcity & severe constraint on food production and economic development of the country.

## Inter linking of rivers:

Under these circumstances, it is very essential that GOI must take action seriously for the inter linking of rivers in the country to use all the available water in the rivers (195 MHM) without postponing further. As discussed early, the water availability in the country is plenty, but it is unevenly distributed and hence the water scarcity problem exists in many parts of the country particularly in south and in west. The unused water 65% which is flowing in to the sea should be utilized profitably by diverting from surplus areas to deficit parts in the country. To solve the water problem, the Govt of India has created the National Water Development Agency (N.W.D.A.) IN 1982. It is an autonomous society to work under the over all control of the ministry of irrigation, G.O.I

The main objectives of the NWDA are to study the following 3 inter linking of river projects to find out the possibilities of the project:

- Ganga- Bramaputra-Cauvery linking or Himalayan River Development.
- Inter linking of Peninsular Rivers ie Mahanadhi, Godavari, Krishna, Pennar, Cauvery & Vaigai or Peninsular Rivers Development
- Divert the west flowing rivers in Kerala, Karnataka, Goa& Maharashtra to east ie to Tamil Nadu, Karnataka, Andhra Pradesh, & Maharashtra States.

Though all the 3 proposals are feasible & Workable, immediate action can be taken for items 2&3 simultaneously as the detailed study has been undertaken and the cost is within reasonable limit.

### A. Inter Linking of Peninsular Rivers

The NWDA has done an excellent job. It has identified 17 links under Peninsular river development plan. It has also prepared the pre feasibility reports of all the 17 links along with completing feasibility reports of most of the links.

Among the various Peninsular rivers, Mahanadhi and Godavari do have enough surplus supplies, even after meeting the ultimate projected demands of the basin states. It is proposed to provide Mahanadhi – Godavari link running along east coast, to transfer excess supplies of Mahanadhi to Godavari by gravity flow. This proposal is likely to irrigate drought prone areas of Maharashtra, Andhra Pradesh and Tamil Nadu. Then Krishna - Pennar link to meet the enroute irrigation requirements in Krishna and Pennar basins.

The Pennar – Kaveri link shall out fall into Cauvery at Grand anicut. After utilizing the enroute, about 180TMC will be reaching grand anicut, of this about 100 TMC is proposed to be utilized in the Cauvery basin and balance of about 80 TMC will be used in Vaigai and Vaippar basins, the area which can be irrigated from this water is about 2 M acres. The NWDA has estimated the cost 10 years back at Rs30,000 crores for connecting Mahanadhi – Godavari – Kaveri and Vaigai having a length of 3716 Km to divert the surplus quantity of about 1000 TMC. (see Fig.1)

The author has collected data and worked out the water requirements (demand) of Kerala state and arrived that surplus available is about 500 TMC though the GOI (NWDA) has estimated about 1000 TMC. If this quantity (i.e.500 TMC) is diverted to east (Tamil nadu), it is possible to bring 5 million acres under irrigation in the Southern districts of Tamil Nadu.

As part of diversion, the NWDA has prepared blue prints to divert the west flowing rivers to East in Kerala state. According to which the Pamba and Achankoil rivers carry about 250 TMC in Kerala can be diverted to Vaippar river in Tamil Nadu to an extent of 22 TMC to be used in the drought prone area of Tirunelveli, Toothukudi, Virudhunagar districts to irrigate about 2.26 Lakhs acres at an estimated cost of Rs.1400 crores.

Yet another project in the minds of farmers in Tamil Nadu is Pandiar and Punnampuzha scheme. This scheme was visualized long back as a hydro electric project, but when farmers of Tamil Nadu wanted it as an irrigation cum hydro electric project, the Kerala Government did not give permission. If this project is implemented (only Tamil Nadu water since the catchment area is in Tamil

Nadu), about 10-12 TMC of water which is flowing to the Arabian sea can be diverted to Bhavani / Moyar basin in Tamil Nadu and this water can irrigate about 1.2 to 1.5 lakhs in dry districts of Coimbatore, Tiruppur and Erode districts. This project can be implemented immediately as the NWDA has done the detailed survey and it is economical, feasible and viable.

### B. Diversion of West flowing rivers in Karnataka to East to use it in Karnataka, Andhra Pradesh and Tamil Nadu

In Karnataka, the Western Ghats which is about 13% of the geographical area of the state has 60% of the states Water resources in terms of quantity due to high intensity of rainfall and every drop of it is running as waste to the sea. The balance 87% of the area of the state mostly comprising Krishna and Cauvery basins have only 40% of the waters for which Karnataka has water disputes with Tamil Nadu and Andhra Pradesh fighting in courts. The West flowing rivers in Uttara Kannada and Dakshin Kannada Districts of Karnataka state like Nethravathi, Kumardhara, Varahi etc have in all about 2000 TMC annually (Table 3) as against Krishna and Cauvery put together of 1300 TMC.

We can, easily and economically without disturbing the environment and ecology of the forests and without displacement of people, divert the West flowing water to the East Tamil Nadu across the Ghats through pump storage schemes, utilizing the wasted existing thermal power in the night time, during monsoons for removing shortage of supplies for irrigation, Industry and drinking water. By this, it is possible to use the water in Karnataka and share the excess water with Tamil Nadu and Andhra Pradesh.

The Five projects suggested above, if implemented, the water and energy problem of southern states namely Andhra Pradesh, Karnataka, Tamil Nadu, Kerala and Puducherry can be solved and all will live comfortably.

### C. Diversion of Ganga Brahmaputra rivers or Himalayan River development

Mean while, detailed study can be taken up to find out feasibility for all links to connect Brahmaputra - Ganga to other West and

Southern rivers of the country to solve water crisis of the entire country(see Fig.2). The cost of the project may be about Rs.8 to 10 Lakh crores, which is also not much, compared to the benefits. For implementing this project cooperation of Nepal, Bangladesh, Bhutan may be necessary, therefore we can implement the peninsular river development and divert west flowing rivers to East to start with and linking of Ganga – Brahmaputra can be taken up later.

### Efficient water management:

The following are the new irrigation strategies –Water management practices which can be followed /introduced to over come the scarcity of water in the country.

- Systems of rice intensification (SRI method) should be followed in paddy cultivations to save water of about 40-50% and to increase the yield by about 3/4 Tons/Ha.
- Provide drainage especially in canal / tank irrigation and reuse the drained water, if it is suitable for irrigation.
- Conjunctive use of surface and ground water.
- Using sprinkler irrigation in canals and tank command areas for all closely spaced crops except rice.
- Introducing drip irrigation in well irrigated areas for all row crops – cotton, sugarcane, banana, coconut and vegetables, etc.
- Irrigation based on water / fertilizer production function curves
- Training farmers and extension officers in water management
- Conducting seminar / workshop in villages to bring awareness to all farmers to safe water and to increase yield.
- Demonstration and workshops may be organised in village in the farmer's field to use water judiciously.
- Extension officers in water managements should be created in block level as in the case of agronomy, Plant protections, etc.

If the rain water is harvested, conserved and managed properly as detailed above, there should not be any water scarcity problem in the country.

**Table.1. Mean flow, Utilisable Surface and Ground Water Resource – Basin Wise**

S.No	River Basin	Mean flow	Utilizable Flow	Replenishable	*** utilisable
		Surface water	Surface water	Ground Water	Ground Water
		BCM	BCM	BCM	BCM
1	Indus	73.31	46.0	26.50	24.3
2a	Ganga	525.02	250.0	171.00	156.8
2b	Brahmaputra	*629.05	24.0	26.55	24.4
2c	Barak	48.36	-	8.52	7.8
3	Godavari	110.54	76.3	40.64	37.2
4	Krishana	**69.81	58.0	26.40	24.2
5	Cauvery	21.36	19.0	12.30	11.30
6	Subernarekha	12.37	6.8	1.82	1.7
7	Brahmani-Bartarni	28.48	18.3	4.05	3.7
8	Mahanadi	66.88	50.0	16.50	15.1
9	Pennar	6.32	6.9	4.93	4.5
10	Mani	11.02	3.1	7.20	6.6
11	Sabarmati	3.81	1.9	-	-
12	Narmada	45.64	34.5	10.80	9.9
13		14.88	14.5	8.27	7.6
14	West Flowing Rivers Between Tapti to Tadri	87.41	11.9	17.70	16.20
15	West Flowing Rivers Between Tadri to Kanyakumari	113.53	24.3	-	-
16	East Flowing Rivers between Mahanadi & Pennar	22.52	13.1	11.22	10.3
17	East Flowing Rivers of Kutch & Saurashtra & Luni	16.46	16.7	18.80	17.20
18	West Flowing Rivers of Kutch and Saurashtra & Luni	15.10	15.0	0	0
19	Area of Inland drainage in Rajasthan	00.00	-	-	-
20	Minor Rivers draining into Bangladesh & Myanmar	31.0	-	18.12	16.8
	<b>Total</b>	<b>1952.87</b>	<b>690.3</b>	<b>431.32</b>	<b>395.6</b>

Source: CWC, Publication 6/93 – Reassessment of Water Resources Potential of India. Ground Water Resources of India CGWB – 1995.  
 \* : Includes Additional Contribution of 91.81 BCM being flow of 9 Tributaries Joining Brahmaputra  
 \*\*: Assessment is based on mean flow of the yield series accepted by KWDT award. The figure of the CWC assessed from run-off data at Vijaywada is 78.12 BCM.  
 \*\*\* : Computed on proportionate basis from annual replenishment  
 10 BCM = 1 MHM

**Table 2. THE AVAILABLE AND UTILIZABLE WATER PER CAPITA PER YEAR IN M<sup>3</sup> IN INDIA (FROM 1991 TO 2050)**

Year	Population Million	Available Water 283.5MHM per capita /year M <sup>3</sup>	Utilizable water 108.60 MHM per capita/year M <sup>3</sup>	Remarks
1991	850	2830	1290	
2001	1030	2316	1055	500 M <sup>3</sup> – absolute security Scarcity
2011	1210	1970	910	1000- Scarcity and stress
2025	1350-1400 (estimated)	1700	780	1700- Shortage will be local and rare
2050	1650(estimated)	1445	680	>1700M <sup>3</sup> – Water – No Problem M <sup>3</sup> = cubic meter M. U. M = million hectare meter

**Table 3. Annual yield of west flowing rivers in Karnataka state**

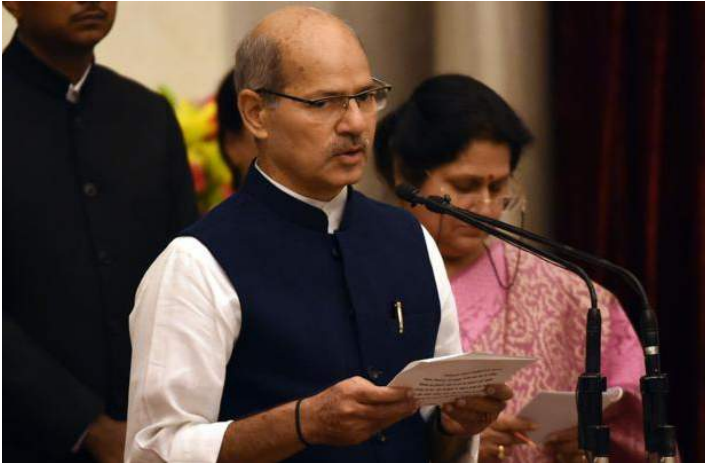
Sl.No.	Sub-basin	Catchment area (in sqkm)	Average yield (MCM)
1	Kalinadi	412	934
2	Shravathi	3592	8816
3	Chakra River	936	991
4	Netravathy	3222	9939
5	Varahi	759	2263
6	Mahadavi	412	934
7	Bedthi	3574	5040
8	Independent catchment between Bedthi and Aghanashini	401	906
9	Aghanashini	1330	3028
10	Independent Catchment between Sharavathi and Chakra River	1042	3086
11	Independent Catchment between varahi and netravathy	3067	9457
12	Independent Catchment between Netravathy and Barapole	1320	4474
13	Barapole	560	1274
	<b>Total</b>		<b>57489MCM</b> Or <b>2000 TMC</b>

Source: Water Resources Development Organisation, Government of Karnataka, Bangalore

# IN BLACK & WHITE

## Anil Madhav Dave: New environment minister has a tough task ahead

Jul 07 2016, Live Mint, Mayank Aggarwal



Anil Madhav Dave, a known river conservationist and environmentalist, is a three-time Rajya Sabha MP from Madhya Pradesh. Photo: AFP

**New Delhi:** There could not have been a better birthday gift for new environment minister Anil Madhav Dave, who got the portfolio on the eve of his 60th birthday on Tuesday.

It's also a fitting gift: Dave, an expert in river conservation, is known as an environmentalist and cycles to work.

After assuming charge on Wednesday, Dave said that he would take forward the work done by his predecessor Prakash Javadekar and would maintain a balance between development and environment—echoing a line that was often used by Javadekar.

Striking that balance will be crucial—Dave's appointment as minister of state (independent charge) for environment, forest and climate change comes at a time when the government is under increasing fire for allegedly diluting environmental laws.

Dave is a third-time Rajya Sabha member of Parliament from Madhya Pradesh.

He is a former pracharak of the Rashtriya Swayamsewak Sangh (RSS), the ruling Bharatiya Janata Party's ideological parent, and identifies himself as an "RSS swayamsewak" (volunteer) on his Twitter handle. He is unmarried.

Fortunately for Dave, the range of subject matters in his new assignment is not expected to pose a problem as he has been actively involved in conservation work on the Narmada river and was also part of the parliamentary forum on global warming and climate change.

"I have to understand you and you have to understand me and very importantly, I have to understand the work. First, I will try to understand the department and its priorities and challenges. It will take me one week's time. After that, we will decide the way forward. Development and environment are together and not against each other," said Dave.

He described himself as an "accessible person" who is ready for a chat with anybody—a style of working that is still rare in India.

"I work hard. Since I do not have kids and don't have to take them out in evenings, you might have problems (due to late working hours). But I will ensure that your evenings and dinners are not spoiled," he added in his introductory speech at the ministry.

Dave, who is a post-graduate from Gujarati College in Indore, has written eight books (in Hindi and English), including one on climate change called *Beyond Copenhagen* and another on freedom fighter Chandra Shekhar Azad.

Dave's concern for the environment can be gauged from his habit of cycling to Parliament.

"I am not using cycle as a transport just to get praise or a photo in a newspaper. I am doing it by choice. When I was nowhere, I was using it, and in future also I will do it," said Dave.

Last year, he earned praise for successfully organizing the World Hindi Conference. Promotion of Hindi as the official language is an issue that is very close to Prime Minister Narendra Modi.

Dave has also been an active parliamentarian. Besides being a member of various parliamentary panels such as those on water resources and the consultative committee of the information and broadcasting ministry, Dave has also been chairman of the Select Committee on Coal Mines (Special Provisions) Bill, 2015, the Select Committee on the Prevention of Corruption (Amendment) Bill, 2013, and the Select Committee on Real Estate (Regulation and Development) Bill, 2013.

Activists are being cautious the new appointment.

"We hope that the ministry of environment, forest and climate change shall under your leadership become truly the protector of the nation's environment, forests and natural heritage like the rivers," said Manoj Misra, an environmental activist and convener of non-profit Yamuna Jiye Abhiyan.

In his initial interaction after assuming charge, Dave tried to steer clear of the controversy regarding the Forest Rights Act, 2006, with the opposition Congress party planning agitations across several states over the alleged dilution of the rights of tribals and other forest dwellers.

"Whether it is Congress government or Bharatiya Janata Party or NDA (National Democratic Alliance) government... it is a continuous process. One should not see it in a compartment," Dave said.

"If some commitment is done by ex-minister or (former) government, the government is bound to do it. It's a continuous process and in this process, one should think of going in right direction," he added.

<http://www.livemint.com/Politics/unDjfb1sqhku2XfXciEsZN/Anil-Madhav-Dave-New-environment-minister-has-a-tough-task.html>

## Hyderabad's Once Mighty Musi River Is Now a Giant Sewer

August 3, 2016, The Quint, Monalisa Das & Harsha Sai

In September 1908, the Musi deluge is said to have killed 15,000 people in Hyderabad and made an equal number homeless.





Today, however, the Musi river which meanders through Hyderabad is dying a slow, death, contaminating its surroundings just as the residents and authorities of Hyderabad have contaminated it.

Rising in the Ananthagiri hill in Ranga Reddy district, the Musi flows into the Krishna at Vedapally in Nalgonda district. But as it flows through Hyderabad, it turns into a giant sewer, filled with garbage and industrial waste from the city.

Years of neglect have earned it the notoriety of being named one of the most polluted rivers in the country. Thanks to civic failure to address this, the Musi has kept up this dubious distinction for the third consecutive year in a row.

Due to indiscriminate urbanisation and lack of planning, the river has become a receptacle for all the untreated domestic and industrial waste water in the city.

## Crores Spent, Yet No Progress

This point was forcefully made in the PIL filed with the Hyderabad High Court in Hyderabad some months ago by the city-based Forum for Good Governance (FGC). Ironically, it was the 1908 deluge that spurred the then Nizam into introducing urban planning in Hyderabad.

In the PIL, the Forum has pointed out that the government has made little progress in cleaning up the river. This, despite the Musi being part of the Central Government's National River Conservation Plan (NRCP) for the past six years.

The Hyderabad Metropolitan Development Authority (HMDA) has also separately prepared two projects for Musi's conservation at an estimated cost of Rs 580 crore and Rs 150 crore.

But it appears that money and policy measures aren't enough to clean up the industrial and sewage Musi.

"The chemical waste which enters the river from industries seeps into the ground and contaminates ground water. The same water is consumed by people and adversely affects their health."

—Jasveen, Co-convener, Save Our Urban Lakes (SOUL)

The PIL points out that the same water is used even to grow food grains and vegetables which are consumed by city residents.

The Common Effluent Treatment Plants (CETPs) which have been set up to treat effluents from industries are not able to do so efficiently with the chemicals ending up in the river.

## Failed Clean-up Efforts

In March, Minister for Municipal Administration and Urban Development KT Rama Rao said that 51 nalas on the 30 km stretch of Musi which runs through Greater Hyderabad emit sewage directly into the river. Only 605 million litres per day (MLD) of the 1,250 MLD sewage generated is treated. The rest reaches the river untreated.

M Padmanabha Reddy, the Secretary of FGC said that the Musi remains polluted because the government tried to implement the interception and diversion method:

Water which comes into the Musi would be intercepted at check dams, diverted to Amberpet area where sewerage treatment plants would remove the waste before directing the water back into the river channel.

"It barely worked for a few days before fizzling out."

—M Padmanabha Reddy, Secretary, FGC

Giving another example of failed clean-up efforts, Padmanabha said that the Greater Hyderabad Municipal Corporation (GHMC) had invested Rs 50 crore in the construction of a rubber dam near the Hyderabad HC to separate waste from water.

Accumulated water at the rubber dam created a stink in the locality, and also became a breeding ground for mosquitoes. The functioning of the dam was stopped after residents of the area complained, said Reddy.

"The biggest threat to Musi today is the waste from the Hussain Sagar Lake - which is also being cleaned - being diverted into the river. Water from the Musi flows into fields in low-lying areas, contaminating vegetables"

—M Padmanabha Reddy, Secretary, FGC

A 2012 study on the impact of the pollution on health and economic conditions of downstream villages found that the pollution gave rise to several major problems including a high incidence of diseases such as arthritis, diarrhoeic, skin allergies, stomach pain, malaria, food poisoning, eye diseases, pediatric problems and jaundices.

Despite this, the Telangana government is yet to come up with a proper plan for Musi's conservation. Perhaps it fails to realise, that the waters of the Musi are tied to the people of Hyderabad.

In any case, the government officials hardly have to brave the once mighty river's flood waters to meet a lover, as Muhammad Quli Qutub Shah did, before he became the fifth ruler of Golconda.

He named the city after her twice. He renamed Bhagmati's village Chichlam as Bhaganagar.

When there was a shortage of water in Golconda, he shifted the capital to Bhaganagar. By this time, she had changed her name to Hyder Mahal after embracing Islam. And so, Quli Qutub renamed the city again: Hyderabad, where the Musi flows.

(This article was published in an arrangement with The News Minute)

<https://www.thequint.com/environment/2016/08/03/hyderabad-once-mighty-musi-river-reduced-to-a-giant-sewer>

## Cleaning up the Chaliyar, on kayaks!

Sep 28, 2016, The Times of India, Kochi, Arya UR

Kayaking as a sport might still be new to the State, with more foreigners than locals opting for it in tourist spots. But a group of kayak enthusiasts have set out to change that notion; and not only did they paddle all the way down River Chaliyar, they also cleaned up the river in the process!

The group, consisting of 50 volunteers from in and around the State, assembled near the lush grassy banks of the Chaliyar in Nilambur recently, armed with the motto 'Lets Kayak for a Cause'. Their aim? To clean up the trash floating along the river banks. And in three days, the group covered 68 km of the river, collecting no less than 600 kilos of garbage!

### 'The change should begin from us'

It all began when a Dubai-based financial consultant, Kaushiq Kodithodi, started out with a casual clean up drive of the river, all by himself. "I have always been fond of kayaking. Once while paddling in the Chaliyar a few years ago, I encountered floating empty beer bottles, an old slipper and a stinking plastic bag with food waste floating on the river. In just 10 minutes, I could collect one kilo of waste. I then decided to take it up as an initiative. Why not club an adventure sport with a cause?" says the 44-year-old.

This is just a beginning and also a means to make people aware of the need for conservation of the river, he adds. "The change should begin from us. The local public are responsible for preserving the water bodies."

The campaign kicked off from Nilambur in Malappuram district, crossed 8 km in the first day followed by 30 km each in the next two days. It concluded at Beypore in Kozhikode district, where the river meets with the Arabian Sea.

### My trash, my responsibility

The initiative, held in association with the District Tourism Promotion Council and the Clean Rivers Initiative Trust, got shared widely over social networking sites under the hashtag # Chaliyar River Challenge. And it got noticed by those who grew up near the river banks but are living elsewhere now. For Saifuddin Poovanchery, an NRI businessman, the river has a sentimental value as his hometown is situated on its banks. "I got a notification about the campaign from social networking sites, and flew down with my 8-year-old son Nadhan to participate in it. I believe it will be an inspiration to many," he says.

And such events should not be restricted to rivers, he feels. "During the monsoons, it is a sickening sight to see the seashores in and around Kozhikode covered in plastic litter. I took my son along as I wanted to instil in him the motto — 'My Trash, My Responsibility'."

Nadhan who celebrated his 9th birthday on September 24 shared his excitement in indulging in a nature conservation activity on his special day. "I was a little scared while getting into the kayak but soon got over it. We saw plastic bottles and covers floating here and there in between the waves.

I collected it along with my father; the plastic is toxin for the beautiful aquatic life under the river," he says.

Echoing his view is Brijesh, for whom kayaking is an yearly affair. "I often go kayaking. It is similar to cycling on the road as there is no motor or fuel in the boat to pollute the river. The Chaliyar is beautiful as she makes us fall in love with her every time we travel through her. It was saddening to see poultry waste and rotten food litter the tree branches spread across the shores of the river. I have nostalgic memories of a clean Chaliyar as I spent my childhood days in her surroundings," he adds.

### Restoring the beauty of the Chaliyar

Apart from professionals and amateurs, the presence of international champion and national kayaker Kaustubh Khade added to the excitement. "We treat rivers as sacred and conduct pujas and rituals in the river Ganga. But on the other hand, we pollute the rivers, as an effect of urbanisation. In the late 60s, a deadly incident occurred where hundreds died after drinking water from the river, polluted by toxic waste emitted from factories. The river regained its lost glory with the timely intervention of the government. The beautiful river and its surroundings are a hotspot for tourism but the unsightly garbage spoils the view," says Kaustubh. Welcoming the campaign, U V Jose Director, Department of Tourism says, "I highly appreciate this initiative. It shows that change has begun from the basic level. This initiative has strong potential in conserving water bodies. As tourism is currently focusing on eco-adventure projects, the Chaliyar River Challenge is a welcome initiative."

### Awareness for school children

Apart from cleansing the river, the group had also conducted awareness classes in schools nearby. It thus provided an opportunity for students to familiarise themselves with various river conservation programmes. Brijesh Shaijal, who heads the Clean Rivers Initiative Trust and coordinator of the campaign, says, "Schoolchildren are our future. By educating them about the value of river bodies, they will think twice before throwing waste in rivers and public places tomorrow. The NSS units of the schools had offered their support in river cleaning."

### Discovering the joys of kayaking

In the process of cleaning up the trash, many who were trying out kayaking for the first time, discovered the joys of the sport as well. Jopu John, a planter from Nilambur, says, "I found the experience exhilarating. Though I had often passed through the road near the Chaliyar, I had never noticed its beauty. While rowing under the trees, I re-discovered the river as well, and felt refreshed."

For Mumbai-based architect Ruta Sinhasane, her first kayaking experience was a truly fulfilling one. "Kayaking had been in my bucket list for a while, and I didn't want to miss it after getting a notification of the vent. It was an adventurous ride but calm and peaceful as well," says Ruta.

<http://timesofindia.indiatimes.com/city/kochi/Cleaning-up-the-Chaliyar-on-kayaks/articleshow/54547129.cms>

## To conserve Narmada, Madhya Pradesh CM to embark on Yatra

September 15, 2016, Business Standard, Bhopal, Shashikant Trivedi

Madhya Pradesh chief minister Shivraj Singh Chouhan has once again decided to try out the time-tested tactic of holding a yatra to promote Narmada conservation.

Earlier last year, he had embarked upon a 'Swabhiman Yatra' or March for Self-respect to convince citizens across the state that it was he who blew the lid off the Vyapam scandal and that he had done everything possible to bring the guilty to book.

The proposed yatra, named as Narmada Sewa yatra will roll from November 11 to 8 March 2017 covering a distance of 2,930-kilometre distance and substantial swathes of the state.

"The Chief minister will start his Yatra on November 11, the object is to conserve of Narmada by motivating people that the mighty river has persistently contributed to the state economy and its culture, which is why everyone should conserve it. The Yatra is an endeavour to scale up efforts in conserving the river which is main artery of the state," Ashok Barnwal, principal secretary to chief minister told BS, "It would promote and encourage people how to conserve the river by checking pollution, planning more trees, cleanliness and adopting organic farming particularly in those areas contiguous to the river banks." The key activity during the proposed yatra will be identifying source of pollution to the river and plantation on either sides of the river.

A website on the proposed 'Narmada Sewa Yatra' has also been launched with an appeal to attract commoners to join the yatra.

"Anyone, after registering on the designated website, can join the yatra, wherever and whenever he likes during the schedule. A core group consisting of fifty experts from various strata will also join Yatra. They will include members of non-government organization, river conservationists, environmentalists, agriculture and forest experts," another officials in the state government said.

The villagers, settled on the banks of the river, will host choupal, meetings to highlight cultural and religious importance of the river in daily-life of the local people. "State would also incorporate suggestions of local villagers to conserve the river," the official said.

On financial front state is arranging funds on clean Narmada drive under National River Conservation Plan through its Urban Development department. The plan envisages sewage management in towns developed nearby Narmada river and its tributaries. Also the plan seeks to augmenting water supply in these towns.

As many as 54 towns are settled near Narmada river banks and need nearly Rs 1,350 crore for necessary sewerage or waste management. The plan, which has yet to come out of drawing board, is to cover 24 towns developed on a 10-km strip on the either side of the river while the second phase was to cover 30 towns of 50 km stretch.

State has so far received an assurance for a fund of 116 million US dollar from World Bank and 50 Million Euro from KfW Bank, Germany. The KfW is a German government-owned development bank based at Frankfurt. The Central government would also fund at 50 percent of grant under Amrut (Atal Mission for Rejuvenation and Urban Transformation) towns.

The first phase of the plan will augment water supply in Sewda, Burhanpur and Khargone towns while sewage management will be undertaken in Maheshwar, Shajapur, Chhindwara, Mandsaur and Nasrullaganj towns.

In second phase, water supply augmentation project will be introduced in Morena, Bada-Malhara, Alot and Patera towns, while sewage treatment plants will be set up in towns of Dindori, Amarkantak, Budni, Shahganj, Bhedaghat, Mandleshwar, Omkareshwar, Katni, Singrauli, Shahdol, Chitrakoot (settled at Mandakini river), Nemawar and Dharampuri towns.

The project cost under World Bank would reach Rs 1,330 crore approximately. Earlier after investing some fund in creating infrastructure in few towns, Madhya Pradesh government had sought funds for Narmada conservation under National River Conservation Plan.

The Narmada river flows westward covering a distance of 1,312 kilometres. It rises near Amarkantak range of mountains and is the 5th largest river in the country that traverses Madhya Pradesh, Maharashtra and Gujarat and drains into Gulf of Khambat.

Yatras have been key tactic to the BJP's rise. In 1990 party's patriarch LK Adwani embarked upon a Rathayatra to support construction of Ram temple in Ayodhya. Prime minister Narendra Modi, when he was Gujarat Chief minister, also emulated the same through his Gaurav Yatra in 2002 to restore "pride of Gujarati people." In 2012 he organised another "Vivekananda ViKas Yatra" to walk across Gujarat.

[http://www.business-standard.com/article/current-affairs/to-serve-narmada-madhya-pradesh-cm-to-embark-on-yatra-116091500373\\_1.html](http://www.business-standard.com/article/current-affairs/to-serve-narmada-madhya-pradesh-cm-to-embark-on-yatra-116091500373_1.html)

## Namami Gange: Uma Bharti launches 231 projects; all you want to know about the 'Clean Ganga' initiative

July 7, 2016, The Financial Express

Namami Gange programme, or the National Mission for Clean Ganga, is a project that has been a dream of the Narendra Modi government. With the launch of 231 projects, under the Namami Gange programme, Union Minister of Water Resources, River Development and Ganga Rejuvenation Uma Bharti has taken an important step towards a fulfilling a key promise of the government.

The project aims to reduce pollution and ensure rejuvenation of the river Ganga. The idea is also to maintain minimum ecological flows in the river Ganga with the aim of ensuring water quality and environmentally sustainable development.

Today's projects involve modernization and redevelopment of ghats and crematoriums, development of sewage infrastructure and treatment, afforestation, tree plantation (medicinal plants), pilot drain project, interceptor drain project, trash skimmers and conservation of biodiversity.

***We take a look at what all is proposed to be taken up under Namami Gange programme, as published on the National Mission for Clean Ganga website:***

- (i) Nirmal Dhara- ensuring sustainable municipal sewage management
- Project prioritization in coordination with Ministry of Urban Development.
- Incentive for states to take up projects on Ganga Main-stem

by providing an additional share of central grants for sewerage infrastructure.

- Uniform standards for both MoUD scheme and Namami Gange programme, 10 years mandatory O&M by the same service provider at par with NGRBA programme and PPP, Mandatory reuse of treated water
- Expanding coverage of sewerage infrastructure in 118 urban habitations on banks of Ganga- estimated cost by MoUD is Rs 51000 crore

(ii) Nirmal Dhara- managing sewage from Rural Areas

Mo DWS scheme for all Ganga bank Gram Panchayats (1632) free from open defecation by 2022, at a cost of Rs 1700 crore as central share

(iii) Nirmal Dhara- managing Industrial discharge

- Making ZLD mandatory
- Rationalized water tariff to encourage reuse
- Real time water quality monitoring

(iv) Aviral Dhara

- Enforcing River Regulatory Zones on Ganga Banks
- Rational agricultural practices, efficient irrigation methods
- Restoration and conservation of wetlands

(v) Ensuring ecological rejuvenation by conservation of aquatic life and biodiversity

(vi) Promotion of Tourism and Shipping in a rational and sustainable manner

(vii) Knowledge Management on Ganga through Ganga Knowledge Centre leading to a Ganga University of River Sciences

However, to control the spread of pollution and to contain it in manageable limits certain interventions would be necessary in short term. Group of Secretaries under guidance of Hon'ble Ministers has identified following activities:

- i) Scheme for rehabilitation and up-gradation of existing STPs along Ganga
- ii) Ensuring 100% sewerage infrastructure in identified town alongside Ganga
- iii) In situ sewage treatment in open drains
- iv) Support for preparation of DPRs
- v) River Front Management for Ghat's developments in selected cities and towns
- vi) Industrial pollution abatement at Kanpur on priority
- vii) Action Plan for Char Dham Yatra –Public amenities, waste disposal and sanitation
- viii) Capacity building of urban local bodies
- ix) Afforestation – Conservation of Flora
- x) Conservation of Aquatic life – special attention on Dolphin, Turtles and Ghariyals etc.
- xi) Disposal of flowers and other puja material
- xii) Ganga Vahini
- xiii) GIS data and Spatial Analysis for Ganga basin

xiv) Study of communities depending on Ganga for their traditional livelihood

xv) National Ganga Monitoring Centre

xvi) Special guidelines for sand mining in Ganga

xvii) Assessment of Special Properties of Ganga Water

xviii) Communication and Public Outreach Activities

<http://www.financialexpress.com/india-news/namami-gange-uma-bharti-launches-231-projects-all-you-want-to-know-about-the-clean-ganga-initiative/309521/>

## Govt faces flak over lack of progress on river zone regulations

Aug 23 2016., Live Mint, Mayank Aggarwal

It took the Uttarakhand floods of 2013 to get the environment ministry to start work on a river regulation zone (RRZ) policy to prohibit or regulate development activities on riverfronts and floodplains. But nearly seven months after a draft policy was sent to all states for comments and suggestions, only a handful have responded.

And the states that have reverted on the draft oppose it as they fear the policy will severely constrain their development works near floodplains and along rivers.

The RRZ policy had been in the works since 2002, but work on it received a boost only after the June 2013 floods in Uttarakhand, which killed nearly 6,000 people. Finally, on 8 January 2016, the draft RRZ policy was sent to all the states.

The proposed policy seeks to prohibit or regulate developmental activities on riverfronts and floodplains. It proposes to create three river conservation zones (RCZs)—prohibited activities zone, restricted activities zone and regulated activities zone—in floodplains. For mountain rivers, the policy proposes to create two zones—a prohibited activities zone and a restricted activities zone.

“We have received comments till date from states and Union territories like Kerala, Maharashtra, Karnataka, West Bengal, Mizoram, Sikkim, Punjab, Uttarakhand, Andaman and Nicobar Islands and Puducherry. They are being considered,” said a senior official of the environment ministry, who did not want to be identified.

“All the comments received essentially oppose the proposed RRZ,” said the official, adding that a reminder was issued in February and May to states yet to send in their comments.

Though states fear that such a policy will bar development work in river floodplains or on riverfronts, the ministry has repeatedly clarified that it will not bar all development but will only regulate it and prohibit certain work in certain areas.

Environmentalists have been pointing out that unregulated development and construction in vulnerable river floodplains has led to unimaginable devastation. They draw attention to the 2013 Uttarakhand floods and recent cases of urban floods like the one in Chennai last year that claimed many lives and damaged property worth hundreds of crores of rupees.

“Every year, one city or another is facing floods in India because we

have left no space for rivers. So, rivers are troubling us. Why can't people understand this basic fact? There has to be a legal prohibition on development near rivers," said Manoj Misra, convener of the Yamuna Jiye Abhiyaan, an organization that has been working to clean and revitalize the river for nearly a decade. "The RRZ policy is long overdue. We hope the government now at least does something for this policy which has been pending since 2002. Unregulated construction on floodplains increased the magnitude of the 2013 Uttarkhand floods," Misra said, noting that the RRZ notification has not been made public.

Meanwhile, the National Green Tribunal on Monday took strong exception to the delay in filing a report on RRZ and directed the environment ministry to submit the same by 3 October.

The tribunal, headed by justice Swatanter Kumar, noted that it had directed the environment ministry to submit a report by an expert group on river regulation in 2013 but for the past three years, the ministry has done nothing.

During the hearing, the ministry informed the tribunal that it has already sent the draft RRZ policy to states and is awaiting their response.

<http://www.livemint.com/Politics/ePeQEiqQkLAD0UZyI8WN5N/Govt-faces-flak-over-lack-of-progress-on-river-zone-regulati.html>

## Experts worry over state's extended 'river rejuvenation' programme

Aug 14, 2016, The Times of India

PUNE: The state government's decision to accelerate the 'river rejuvenation' programme under its ambitious Jalyukta Shivar campaign has drawn flak from environmentalists who fear the move could potentially destroy the rivers.

The state has asked collectors of all districts to submit proposals for taking up the 'rejuvenation' work on almost all rivers in Maharashtra.

The state has appointed a committee with the water conservation minister as its chairman. The committee will review the detailed project reports submitted by the collectors.

"To allow a committee to examine the detailed report submitted by each collector is a welcome move. However, there are some major gaps vis-a-vis major environmental issues that need to be plugged. The government resolution (GR) mentions desilting, straightening and deepening of rivers. This is not river rejuvenation," states a recent letter written by water experts Pradeep Purandare and Parineeta Dandekar to chief minister Devendra Fadnavis.

The letter adds that such works are neither necessary nor sufficient to achieve river rejuvenation and it is scientifically wrong to equate them (the work) to rejuvenation of rivers. Straightening of rivers is entirely opposed to their ecological integrity, is environmentally destructive and downright dangerous to the river banks and riverine population.

Experts have pointed out that the committee consists only of ministers and bureaucrats from the water conservation department. "River rejuvenation, or even for that matter river widening/deepening, is closely linked to environment and groundwater issues about which the water conservation department or their engineers do not have expertise,"

Dandekar told TOI.

Dandekar said it is unclear how rivers, which are extremely important ecological and social entity, suddenly came in the ambit of Jalyukta Shivar campaign on December 8 last year without any studies when all other government orders before that specifically left them out of the campaign ambit.

"Clearly a detailed study is needed before tampering with rivers because any damage wrought on rivers has far reaching social, environmental, livelihood and water security implications, and is likely to be irreversible on a long term basis: for the society as well as the ecology of the region. If at all any decision is to be taken, it has to be well studied by experts and communities. In other words, we need to take an informed and democratic decision. A detailed report made by the collector office, scrutinized by the water conservation department committee will not suffice," states the letter.

Dandekar's letter states that the rivers have been included in the 8th December 2015 GR through backdoors. "This perhaps was done because hap-hazard works were already being undertaken on rivers. But this is clearly not a well-thought out decision. This interference with rivers, without proper studies or processes is dangerous and even illegal," said Dandekar and Purandare in their joint letter.

The chief minister has not responded to the letter so far. Aurangabad divisional commissioner Umakant Dangat told TOI that the Jalyukta Shivar campaign has helped parched Marathwada in storing water. "The campaign is a success. If you want to see the result, come to Marathwada. There are some things on which we need to improve while implementing the programme. But, overall, the campaign has helped remove silt from rivers and expand their storage capacities without disturbing the aquifers," Dangat said.

While a rejuvenated river will provide more stable, dependable and better quality water, only impounding and abstracting more water from a river bed is not rejuvenation and should not be labelled as such. Alternatively, there are many ways to rejuvenate rivers, which will also lead to increased water availability.

### ***Some of the steps taken to rejuvenate parched and polluted rivers in Maharashtra include:***

Area Treatment to harvest water where it falls, slow down the surface flow and increase recharge in aquifers in aquifer recharge zone. This cannot be achieved by deepening and widening of rivers and streams directly at the valley level, but would need a ridge-to-valley approach.

Groundwater recharge and regulation in the catchment to protect aquifers, improve water availability for all and improve base flows in the river. It is the base flows that contribute significant part of surface or sub surface river flows in drought.

Reforestation and protection of forested catchments. Forested catchments reduce soil erosion and siltation of the river, they regulate stream flows and micro climate. A protected catchment automatically means lesser silt in rivers

Vegetated and protected riparian banks. These protect the river banks, reduce erosion and maintain water quality Environmental flows that

ensure environment flows into rivers is a key requirement for river rejuvenation. Maharashtra urgently needs to move in that direction. Living rivers with a part of their natural flow maintained (either perennial or seasonal) are not a luxury but necessity for the water, food, livelihood and ecological security of the people.

<http://timesofindia.indiatimes.com/city/pune/Experts-worry-over-states-extended-river-rejuvenation-programme/articleshow/53690945.cms>

## The making of a river

August 15, 2016, *The Indian Express*,  
Khushboo Sandhu

From Uncha Chandna, a village in Haryana's Yamunanagar district, about three feet of water now flows through a channel that the Haryana government has deemed to be the route of the River Saraswati.



A villager shows the algae floating on Saraswati. *Express*

Photo by Jaipal Singh

Uncha Chandna is where earlier this month the Haryana Irrigation Department inaugurated its version of the Saraswati with a little bit of help — 100 cusecs to be exact — from the Dadupur-Nalvi feeder canal that brings water from the Yamuna to meet the irrigation demands of 225 villages in three districts of the state, Yamunanagar, Kurukshetra and Ambala.

Like it or not, this 100 cusecs of Yamuna water — one cusec equals 28.317 litres of water — from the feeder canal is now the water of the Saraswati. And at the time of writing, some 10 days after the inauguration, these cusecs had flowed up to Kurukshetra, 40 km to the south, surmounting the caving in of the sides of the channel at various places from the shock of the surging water.

After crossing Kaithal district, and crisscrossing Punjab for about 4 km, the water will merge with Ghaggar — a total distance of 153 km — with help from a booster shot of another 100 cusecs in the coming days.

Some 55 km north of Uncha Chandna is Adi Badri, commonly believed as the starting point of the “lost” Saraswati, in a wooded part of Yamuna Nagar close to the Shivalik foothills. The Irrigation department has already cleared a route on 37 km of this distance so that the River Somb, a small tributary of the Yamuna which runs its course in Yamunanagar, and its little rivulets here and there, can all be linked and flow without interruption towards Uncha Chandna, so that they can join the man-made Saraswati. The work on the remaining 18 km is proving tough. For along the route from Adi Badri to Uncha Chandna, lie many villages, whose fields are in the way of Mission Saraswati.

The government says there are land revenue records to prove that the fields have come up on what used to be a river. Privately owned land will be acquired for the The idea that there was a river called Saraswati comes from references to it in the Rig Veda. Academics, historians, archaeologists, geologists and other scientists, believers and non-believers remain bitterly divided about its Liberal historians hold the view that the people of the Vedic age were migrants from what is now Central Asia. They view the Saraswati Mission as an attempt by Hindutva lobbies to draw a connection between the Vedic period and Harappan culture to prove that the people of Vedic India were indigenous. Their Hindutva counterparts denounce them as pushing a “Marxist” view of history.

The BJP government in Haryana wasted little time in announcing its plan to find the Saraswati after coming to power. Haryana Chief Minister Manohar Lal Khattar had termed the project to unearth Saraswati as a “mission to keep alive the soul of a community”, making no effort to hide the saffron colour of the project.

A Saraswati Heritage Development Board was quickly set up, and work began. But the foundation for the revival of the river was actually laid by the previous Congress government led by Bhupinder Singh Hooda that completed the construction of the first phase of the Dadupur-Nalvi canal in 2009. The BJP government's efforts got a boost when water was found in the dry river bed of the river at Mugalwali in Yamunanagar district in May last year. People flocked to the site to offer prayers and take the “holy” water. The government got the digging done under the Mahatma Gandhi Rural Employment Guarantee Scheme. The work was initiated on April 21.

District Development and Panchayat Officer, Yamunanagar, Gagandeep says, “After passing through 41 villages from Kaithal district, the river course enters Rajasthan and from there to Gujarat. There is satellite imagery of ISRO and Survey of India maps to show that the river existed here. We also have revenue records that show a river. These records were matched with the depressions. Some pieces of pottery were also recovered from the site that shows that a civilization existed here, which means there must have been a river.” Project Saraswati is a package of other measures, including flood protection, promotion of eco and pilgrimage tourism, water conservation and improving the ecological balance. The government had announced a budget of Rs 50 crore for various works to be undertaken.

Three dams are also planned to ensure the river flows perennially. One of the dams will be at Adi Badri, another at Lohgarh and the third at Haripur. Officials say that river Somb floods the fields during the monsoon. A reservoir will be constructed at Uncha Chandna to channelise this water. While the reservoir is likely to be constructed in a few months, the dams will take two to three years to complete.

In March this year, the Centre set up an expert committee to review the available information about the river from studies already conducted. In a meeting of a multidisciplinary committee held recently at Delhi, discussions were held on the possibility of hiring consultants to promote tourism around the river.

The findings following excavation at Rakhigarhi has led officials to make claims that the river flowed here as Harappan settlements are known to have come up along riverbanks.

A board at the entrance with a picture of goddess Saraswati welcomes visitors to Saraswati Nagar, a village that is 1 km ahead of Uncha Chandna, in the direction of Adi Badri. Till February this year, it was known as Mustafabad. But going by its present condition, Saraswati might not want to be associated with this place, and pilgrims and other tourists would be shocked if they came.

There is no shortage of sign boards directing visitors to a Saraswati temple and a dham in the village, nor of garbage strewn around the site with pigs and stray dogs foraging in it.

Anil Chauhan, an agriculturist who frequently visits the temple, says it has expanded over the years. He feels there needs to be more upkeep in case the government wants to promote tourism.

“Adi Badri gets a lot of visitors and has tourism potential. However, if the government wants to attract tourists here then care has to be taken for maintaining this place. It needs to be spruced up,” he said.

Another person, who has a shop in the area for the past three decades, says that with the change in name, the situation seems to have worsened. “There is an absolute lack of maintenance here. How can the government hope to attract tourists? Even when I am selling packed items in my shop, the filth outside turns people away. I have seen the mounds of garbage increasing by the day. The government talks of Swachh Bharat campaign. It seems this village has been given a miss,” he said on condition of anonymity.

At a little distance from the Saraswati temple is a cremation ground. The route of the Saraswati river passes the rear side of the cremation ground. The ashes of the cremated bodies are dumped into whatever water there is now from the Somb. The water has a layer of algae floating on it, and the sides are lined with garbage.

Baldev Kumar, a tubewell operator, says the manner in which the river is being polluted it looks like “Narakwati”. He said, “The sewerage from several villages enters river. If this continues, then the purpose with which the government has undertaken the project will be defeated.”

Prashant Bhardwaj, deputy chairman, Saraswati Heritage Development Board, says the problem is being experienced at several villages but says it strengthens the evidence for a pre-existing river. “Cremation grounds were constructed on the banks of rivers. This is another piece of evidence that the Saraswati was present here. We are giving the option to villagers that alternative sites will be allotted for the crematoriums so that the river is saved from pollution,” he said.

He added attempts are also being made to create awareness among people to not pollute the water of the river. He said this was not a problem only of Saraswati but of the Ganga and Yamuna rivers as well. People also need to make a contribution, he said. This is not the first attempt to find the Saraswati. In 1985, Dr V S Wakankar, an archaeologist and Padma Shri awardee, claimed to have traced the basin of the Saraswati from Adi Badri to Kutch. A group of 30 experts, including the incumbent Chief Minister Manohar Lal Khattar, travelled on the route from Haryana to Gujarat from November 19 to December 20. Khattar who was a pracharak then was part of the yatra for three days.

In 1997, a Saraswati Research Centre was established at Chennai. Two years later, Haryana got a Saraswati Shodh Sansthan, headed by Darshan Lal Jain, former RSS president of the state. Between 1999

and 2000, during the time of the first Vajpayee-led NDA government, even the Indian Space Research Organisation got into the act to trace the route through GIS mapping. In 2002, the Centre notified a project for conducting multi-disciplinary study of the river. NDA's former Culture Minister Jagmohan ordered excavation in Haryana to trace the river, a move that was viewed by the Opposition as furthering the saffron agenda.

Jain, ever the active campaigner for the Saraswati, says satellite imagery has shown the presence of the river. “It is no longer a myth,” he said. “Over the years, people have encroached upon land from where the river flowed. This needs to be cleared. It would facilitate in flood control and facilitate utilization of water.”

But now both Congress and Indian National Lok Dal have termed it a BJP ploy to divert attention from its failures and broken promises.

Undeterred by the opposition, the Khattar government is now planning to set up fellowships for the study of Saraswati river. At present, as many as 64 different departments across the country are involved with the Saraswati river project.

Politics and religion aside, Harinder, a landowner in Uncha Chandna village, feels the revival of the river will bring some benefits for the farmers. “It is during the monsoons that we are assured of a steady supply of water in this river, otherwise we are dependent on tubewells. This is impacting the water level. The revival of the river will give us more water for irrigation. While the river has a religious significance, it is vital for farming. We had heard that the CM will come when water will be released. That did not happen,” he says.

While debate rages among academics and historians over whether the river ever existed, for the residents of the Uncha Chandna and other villages on its path, the Saraswati river has always been present.

Seasonal rivulets flow through many villages in this part of Haryana. They fill up during the monsoon and dry down in the other months. People in these villages know them as the Saraswati, and have always done so in their memory. They see these rivulets as having originally come from a bigger river that dried up with time.

Chaman Lal, the sarpanch of Mali Majra, another village ahead of Uncha Chandna, says since the time he was born, he has known there was once a bigger river that flowed past his village called the Saraswati. “Our elders told us about it. The government is trying to revive the river along its entire route. Over the years, farmers started cultivating crops right next to the route of the river. As the river bed dries up during summers, some parts got encroached as well. This obstructed the smooth flow of the river. Also, the landowners do not want the government to use machines to clear the path of the river as their fields will get damaged,” he said.

Chaman Lal adds that over time, sewerage water and garbage are entering the rivulets. He fears this will finally end up in the new Saraswati, when the rivulets all get linked up. “The government needs to ensure that untreated sewerage does not enter the river. There will be no point spending crores of rupees on the project if the pollution is not stopped,” he said.

<http://indianexpress.com/article/india/india-news-india/haryana-government-yamunanagar-district-the-making-of-a-river-saraswasti-uncha-chandna-village-2976067/>

## 302 polluted stretches along 275 rivers across India

July 19, 2016, Governance Now,

(Photo: Arun Kumar)

There are 302 polluted river stretches along 275 rivers in the country. The pollution assessment is based on the bio-chemical oxygen demand (BOD) levels which are the key indicators of pollution, MoS (Independent Charge) of environment, forest and climate change, Anil Madhav Dave said in a written reply in the Rajya Sabha.

Out of these, there are 13 stretches along rivers in Uttar Pradesh, 21 polluted stretches are in Madhya Pradesh, Gujarat has around 20 polluted stretches, while Maharashtra tops the list with 49 polluted stretches.

River Ganga, for which the government rolled out Namami Gange programme and created a separate ministry [Water Resource, River Development and Ganga Rejuvenation], was found to be polluted in four states out of the five states the river irrigates. The river's stretches are polluted in Uttarakhand (where it originates), Uttar Pradesh, Bihar and West Bengal. It isn't polluted in Jharkhand, as mentioned in the report.

### Here is the complete list

In his reply, Dave said that the ministry has been supplementing the efforts of the state governments to reduce the pollution in identified stretches of various rivers under National River Conservation Plan (NRCP) and NGRBA (National Ganga River Basin Authority) programmes. These programmes, before the formation of ministry of water resource have covered polluted stretches of 43 rivers in 200 towns spread over 21 States at a sanctioned cost of Rs 12202.59 crore so far.

Sewage treatment capacity of 5169 million litres per day (MLD) has been created under these programmes. He claims that the Central Pollution Control Board (CPCB) has issued directions the State Pollution Control Board/Pollution Control Committees regarding setting up of sewage treatment plants and utilisation of sewage generated in their respective States. In 2015, it also issued directions to 69 municipal authorities

of metropolitan cities for proper treatment and disposal of sewage generated to control pollution in rivers and other water bodies.

Steps have also been taken by CPCB to promote low waste and no waste concept,

leading to zero liquid discharge by grossly water polluting industries, particularly those located on the river banks, read his reply in the Rajya Sabha.

<http://www.governancenow.com/news/regular-story/302-polluted-stretches-275-rivers-india>

S.No.	State	Stretch Identified	Number
1	Andhra Pradesh	Godavari, Hundi, Krishna, Tungabhadra, Pennar, Kundu	6
2	Assam	Mora Bharali, Barak, Beki, Bharalu, Bhogdoi, Boginadi, Brahamputra, Burhidihing, Deepar Bill, Dhansiri, Digboi, Disang, Jia Bharali, Jhanji, Kalong, Kapili, Kharsang, Kohora, Kundli, Kushiara, Manas, Pagdia, Panchnai, Ranga Nadi, Sankosh, Sonai, Subansiri, Kathakal	28
3	Bihar	Ganga, Harbora, Manusmar, Ram Rekha, Sirsia	5
4	Chhattisgarh	Hasdeo, Kelo, Kharoon, Mahanadi, Seonath	5
5	Daman, Diu and Dadra Nagar Haveli	Damanganga	1
6	Delhi	Yamuna	1
7	Goa	Mandovi, Assonora, Bicholim, Chapora, Khandepar, Mapusa, Sal, Valvant	8
8	Gujarat	Mahi, Narmada, Ambika, Amlakhadi, Anas, Balehwar Khadi, Bhadar, Damanganga, Kaveri, Khari, Kim, Kolak, Panam, Bhogavo, Dhadar, Purna, Sabarmati, Shedhi, Tapi, Triveni,	20
9	Haryana	Ghaggar, Yamuna	2
10	Himachal Pradesh	Beas, Tons, Sirsa, Swan, Sukhana, Suketi Khad, Binwa, Markanda	8
11	Jammu & Kashmir	Banganga, Basanter, Chenab, Chunt Kol, Dewak, Gawkadal, Jhelam, Lidder, Tawi	9
12	Jharkhand	Bokaro, Koel, Damodar, Jumar, Karo, Sankh, Subarnarekha, Koel	8
13	Karnataka	Arkavathi, Bhadra, Bhima, Cauvery, Ghatprabha, Kabini, Kagina, Kali, Krishna, Lakshmantirtha, Malprbha, Manjira, Shimsha, Tungabhadra, Tungha	15
14	Kerala	Chitrapuzha, Kadambayar, Kallai, Karamana, Keecheri, Kuppam, Manimala, Neeleswaram, Periyar, Pullur, Puzhackal, Thirur, Uppala	13
15	Madhya Pradesh	Banjar, Betwa, Bichia, Chambal, Chillar, Denwa, Gohad, Gour, Jammer, Kalisot, Khan, Kolar, Kshipra, Kunda, Malei, Narmada, Parvati, Shivna, Tapi, Tons, Wainganga	21
16	Maharashtra	Wena, Wainganga, Godavari, Bhima, Krishna, Ulhas, Kundalika, Tapi, Gira, Panchganga, Nira, Bhatsa, Rangavali, Indrayani, Chandrabhaga, Vashisti, Mihi, Kanhan, Koyna, Amba, Amravati, Bindusara, Darna, Ghod, Gomai, Hiwara, Kan, Manjara, Mor, Morna, Mula, Mula- Mutha, Mutha, Panzara, Patalganga, Pawna, Pedhi, Pelhar, Penganga, Purna, Savitri, Sina, Surya, Urmodi, Vaitrana, Vel, Venna, Waghur, Wardha	49
17	Manipur	Barak, Imphal, Iril, Khuga, Khujairok, Lokchao, Maha, Manipur, Nambul, Sekmai, Thoubal, Wangjing	12
18	Meghalaya	Bugi, Kynshi, Kyrhukhla, Lukha, Myntdu, Nonbah, Umkhrah, Umshyrpi, Umtrew, Wahblei	10
19	Nagaland	Chathe, Dhansiri, Dzu	3
20	Odisha	Baitrani, Brahamani, Budhabalnaga, Daya, Kathajodi, Koel, Kuakhai, Mahanadi Nagavalli, Rushikulya, Serua, Vansadhara	12
21	Punjab	Ghaggar, Satluj	2
22	Rajasthan	Banas, Chambal, Chappi, Ghaggar, Kali Sindh, Parvati, Jawai, Ujad	8
23	Sikkim	Dikchu, Maney Khola, Rangit, Ranichu, Teesta	5
24	Tamil Nadu	Bhavani, Cauvery, Palar, Sarabanga, Tambirapani, Thirumanimuthar, Vasista	7
25	Telangana	Godavari, Krishna, Manjeera, Musi, Nakkavagu, Sabari, Maner	7
26	Tripura	Gumti, Haora	2
27	Uttar Pradesh	Betwa, Ghaghara, Gomti, Hindon, Kalinadi, Ramganga, Rapti, Rihand, Sai, Saryu, Ganga, Yamuna, Kosi	13
28	Uttarakhand	Bhela, Dhela, Suswa, Ganga, Kosi	5
29	West Bengal	Barakar, Churni, Damodar, Dwarakeshwar, Dwarka, Ganga, Jalangi, Kaljani, Kanshi, Karola, Mahananda, Mathabhanga, Mayurkashi, Rupnarayan, Silabati, Teesta, Vindhadhari	17
<b>Total :</b>			<b>302</b>



## Bhagirath Prayas Samman for Dinesh kumar Mishra Ji: Helping us understand Rivers and Floods

December 2, 2016, SANDRP



In the midst of a serious meeting pontificating on water issues, suddenly one hears an evocative sher in impeccable Urdu, followed by laughter and rounds of Irshad. The sher captures a lot in a few lines.

For an MTech Engineer from IIT and a Ph D Structural Engineer, Dr Dinesh Kumar Mishra, Mishra ji, is a colourful personality.

His erudition on rivers and floods in Bihar is tempered by folklore, songs, myths and shayari. A polyglot, Mishraji speaks and writes with eloquence in not only in Hindi and English, but in Bengali, Odiya and Urdu with equal ease. He holds a doctorate from the University of South Gujarat and has been an Ashoka Fellow. Mishraji is an institution in himself when it comes to rivers and floods of North Bihar and has single-handedly contributed to a gradually changing perception of flooding rivers as a catastrophe or “something to be tamed”.

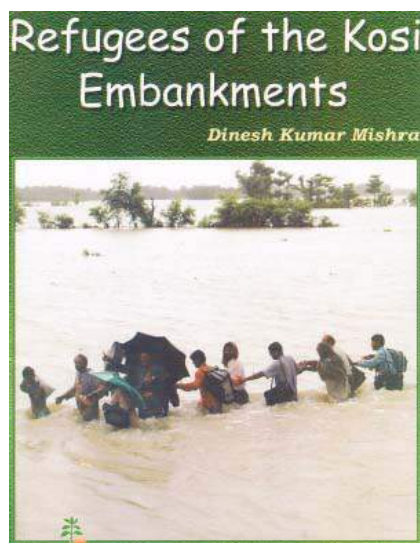
And hence, it gives us great pleasure to share that Mishraji was honored with the Bhagirath Parayas Samman at the India Rivers Week held in New Delhi on the 29th November 2016. India Rivers Week is being organized since November 2014 by a consortium of NGOs including WWF India, INTACH, SANDRP, Toxics Link and PEACE Institute Charitable Trust. More than 100 River experts, planners, researchers, artists, enthusiasts and activists from different parts of the country have been coming together to

celebrate India Rivers Week in Delhi in last week of November to discuss, deliberate and exchange their experiences and ideas aimed at the conserving, rejuvenation, restoration of rivers in the country.

**Citation of Bhagirtah Prayas Samman states** “Dinesh Mishra, an engineer from IIT Kharagpur, has laid the foundation for an extensive knowledge base on floods in rivers. Through his writings, lectures, advocacy and public interactions he has inspired many individuals and organisations to record local knowledge about floods and generate information that creates awareness among communities. All this has become part of a larger social movement... It is an honour to recognize and celebrate Dr Dinesh Mishra’s extraordinary Bhagirath efforts in institutionalizing traditional ways of living with floods.”

Born just prior to independence in a village in Uttar Pradesh, Mishraji has dedicated his life in telling us about destruction wrought by infrastructure centric-flood control measures on rivers... especially rivers of the Ganga basin in North Bihar. Since 1984, Mirshraji is engaged in the study of floods, water-logging and irrigation and has slowly nurtured a diverse army which is able to see a lot more in floods than only destruction. He has helped us see the impact of flood control infrastructure like embankments.

Mishraji believes that India’s flood control policy revolves mainly around embankments resulting in severe environmental problems. The maintenance of such structures is in the hands of “indifferent technocracy” which does not take cognizance of the fact that

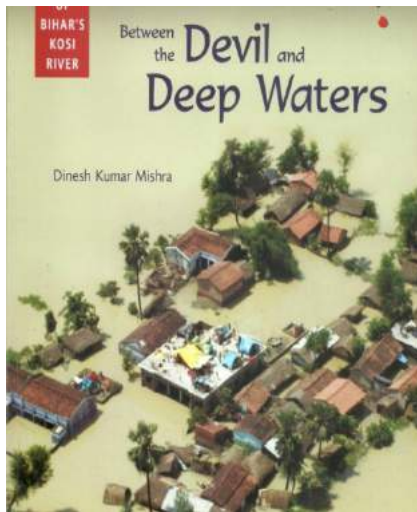


investment in the flood control sector is doing more harm than good. Rising flood prone area of the country is a pointer to that. There are a wide range of aspects that need to be looked into afresh like agriculture, non-farm employment, migration, health, education, and access to civic amenities etc. He finds it intriguing that reciprocal inaccessibility of the flooded areas during the peak season and prolonged water-logging during the peacetime has not attracted the imagination of most of the responsible people. He is trying to learn from the people, their perception of the problem and take it up with those in power while keeping in touch with the people about the probable official intervention. These bridges are rare and much-needed in India. He has raised the issue of floods and water-logging and the links with infrastructure in state, national and international levels.

He has highlighted the futility of embankments as a flood control measures in rivers like Kosi and its tributaries. Through his persistent efforts of over more than three decades, Mishraji has helped change the way river floods are understood and managed. Using an approach which respects the natural cycle of floods, founded on local knowledge, he has robustly challenged the main stream flood control approach. For him, the long-term sustenance of rivers as well as their natural processes is the key, supported by meticulous research into the historical and cultural aspects of rivers.

Mishraji’s narration of how people used to come out in boats to enjoy flooded areas at full moon nights in Bihar is not only poignant, it also reminds us of the paradigm shift that came into our water management when we discarded age-old wisdom and adopted measures which were out of sync for our rivers.

Mishraji’s work is a confluence of solid grass root level contacts, extensive knowledge of local traditions, topography, geography and hydrology, robust field research and unique analysis. His writings including articles, books and films have made a deep impact on current understanding and thinking about floods in rivers and how best to deal with them. Through all this, he has made notable contributions towards developing a new policy dialogue on India’s flood control system, and the impact they have had on livelihood practices.



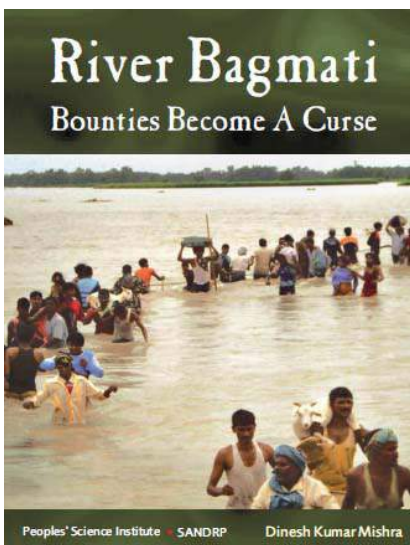
Mishraji is also the convener of an informal group of flood activists called **Barh Mukti Abhiyan**, an effective informal group with wide acceptance and vast contacts. He is currently engaged in writing about river Gandak and Ghaghara and thus shall complete the entire landscape of rivers of north Bihar.

He has over hundreds of Notable among his large number of publications, are "Trapped! Between the Devil and Deep Waters: The Story of Bihar's Kosi River" and "River Bagmati: Bounties Become a Curse". His book "**Boya Per Babool Ka**" was chosen as one of the best books written over the subject of environment by the Ministry of Forest and Environment, Government of India in 2002. This was later translated into English and published titled, 'Living with Politics of Floods' in 2002.

He was a member of the Dams and Development Forum of UNEP and represented Project Affected People there during 2003-07. He was also a member of the

Working Group on Flood Control and Water Logging of the Planning Commission of India to review the progress made in eleventh Five Year Plan and make recommendations for the Twelfth.

He has encouraged many organizations to take up the issue of floods and water-logging in their respective river basins, in Bihar and other states as well, and they are carrying on their works. He has encouraged many groups to take up drainage works of small chauras (land depressions) and resume agriculture on the land that emerges out of water. He provides them with basic technical details and help them executing the work. This has shown very encouraging results as compared to heavily udgeted drainage schemes taken up by the Irrigation Departments.



He has published a book on the River Mahananda (titled Bandini Mahananda in Hindi), a boundary river between Bihar and Bengal, in 1994 followed by a bi-lingual (Hindi and English) book on the Bhutahi Balan

(2004) (Bhutahi Nadi aur Takniki Jhar Phoonk / Story of a Ghost River and Engineering Witchcraft) and on the Kamla River (2005) titled Baghawat Par Majboor Mithila Ki Kamala Nadi/ The Kamla-River and People on Collision Course.

His book on the River Kosi titled 'Dui Paatan Ke Beech Mein – Kosi Nadi Ki Kahaani' was published in Hindi in 2006. Its updated English version titled "Trapped! Between the Devil and Deep Waters – Story of Bihar's Kosi River", co-published by SANDRP, came out in 2008 just before the famous breach of the Kosi embankment at Kusaha in Nepal. Book on Bagmati was published in 2010, titled Bagmati Ki Sadgati. Its English version is also co-published by SANDRP titled "River Bagmati: Bounties Become a Curse" in August 2012. He has now started working on the major river of North Bihar, the Gandak and that will complete detailing the major rivers of north Bihar. This book will touch the Ghaghara and the Burhi Gandak too that flow almost parallel to the Gandak.

Mishraji's crusade to highlight the wisdom behind age-old methods to "live with the floods", his fight to expose the utterly destructive impacts of embankments and their role in amplifying flood misery, coupled with his sensitive and scholarly love of folklore and literature make his work accessible and engaging. We need more people like Mishraji who can tell us the stories of our rivers.

We congratulate him for the Bhagirath Prayas Samman and thank him, on behalf of our rivers, for his Bhagirath efforts.

<https://sandrp.wordpress.com/2016/12/02/bhagirath-prayas-samman-for-dineshkumar-mishraji-helping-us-understand-rivers-and-floods/>



## Cauvery conflict

Frontline

*The reappearance of the crisis shows that only equitable sharing of the river's waters combined with scientific water conservation and management measures and time-tested farmer-to-farmer initiatives can be the solution to the dispute. By R.K. RADHAKRISHNAN in Chennai*

IN August 2009, as Karnataka, much like the rest of India, was coping with the worst monsoon in a century, a Tamil Nadu cadre Indian Administrative Service officer flew to Bengaluru from Chennai. The officer, in charge of Tamil Nadu's Public Works Department, was acting as a courier for his Chief Minister, M. Karunanidhi. His mission was to hand over a letter to Karnataka Chief Minister B.S. Yeddyurappa.

Karnataka Protocol officials received him at the airport and whisked him away to the Chief Minister's residence, where Yeddyurappa was waiting for him. Multiple sources confirmed that Yeddyurappa did not read the letter but he told the officer that he was aware of its contents; he also gave him to understand that he had called at his residence an all-party meeting which he wanted the officer to attend. Yeddyurappa also informed him that bad things about Tamil Nadu would be said at the meeting. After the meeting, when the officer told him that it was not as bad as the Chief Minister had projected, Yeddyurappa remarked with a smile: "It was not all that bad. But wait till you see the MLAs." The officer sat in on the Assembly session that day. The choicest abuses were hurled at Tamil Nadu, and speaker after speaker said no water should be released. No Minister, not even the Chief Minister, dared to differ.

The officer returned to Chennai in the evening of the same day. Before he left, he had one more audience with Yeddyurappa. "Don't worry," the Chief Minister told him. "Tell Anna [Karunanidhi] that water will be released." Water was released the same night. Everything was unofficial. Yeddyurappa maintained that no water was released, while Tamil Nadu cried hoarse over the injustice meted out to the lower riparian State. But what happened as a result of the tacit understanding between the two States was



that no passions were stirred, the delta areas received sufficient water to raise a good crop, and there was no agitation because nothing of this has been recorded.

### Not a new story

The 2009 story had been enacted many times before, too. Durai Murugan, a senior DMK leader who is now the Deputy Leader of the Opposition in the Tamil Nadu Legislative Assembly, said: "I was Public Works Minister for 15 years. I've gone to Bengaluru countless times —when Veerendra Patil was Chief Minister, when S. Bangarappa was Chief Minister, when J.H. Patel was Chief Minister, when [H.D.] Deve Gowda was Chief Minister and when S.M. Krishna was Chief Minister. Each time, there was a huge noise at the all-party meeting or in the Assembly or in both. But each Chief Minister always granted, at least partly, Tamil Nadu's demands, while maintaining a public stance that no water would be released."

Karunanidhi, who began his career in the Cabinet as Public Works Minister in 1967, was party to such tacit understandings. Officials in Chennai say that there was only one instance when this personal touch did not work: this was when he met Kerala's Chief Minister V.S. Achuthanandan in New Delhi in 2006 to resolve the Mullaperiyar dispute.

There was a crisis about water sharing in 1980. One day soon after he came back to power that year, M.G. Ramachandran ordered his driver to take him to Bengaluru

from Coimbatore, where he happened to be at that time. The then Karnataka Chief Minister, R. Gundu Rao, was informed that MGR was on his way. MGR drove straight to Gundu Rao's house, told him about the trouble brewing in the delta districts and got him to release water before the two of them sat down for lunch. One former official said that MGR thanked the Chief Minister and the people of Karnataka before he left for Chennai.

Chief Minister Jayalalithaa's approach has been different. In 1992, during her first term as Chief Minister, she went on a surprise fast for four days on the Marina beach over the Cauvery issue. She relented only after Prime Minister P.V. Narasimha Rao sent his Water Resources Minister, V.C. Shukla, to assure her that a Cauvery monitoring committee would be set up. In 2007, she went on a day-long fast to push for the implementation of the Cauvery Water Disputes Tribunal (CWDT) ruling. Apart from these two instances, she has generally sought the Supreme Court's help or written to Prime Ministers to sort out the issue.

### The problem

In the years of normal rainfall, the Cauvery is able to satisfy all the demands on its water along its 800-km course. Not so, however, in distress years. In some distress years, fights over the Cauvery spill on to the streets of the major cities in Karnataka and Tamil Nadu. How do you divide the river basin waters—about 740 thousand million cubic

feet—among Tamil Nadu, Karnataka, Kerala and Puducherry, which have a combined projected claim of 1,139 tmc ft? The water that is available quite clearly is not enough to meet the needs of all the parties. The different demands of each State and the vagaries of the monsoon make the equation more complex.

Complex, but solvable. A formula was arrived at by the CWDT, which was set up for the purpose and which took 16 years to come up with the final plan. But it left all three States and the Union Territory unhappy. Tamil Nadu was awarded 419 tmc ft: 192 tmc ft to be released by Karnataka and the remaining 227 tmc ft to come from tributaries within Tamil Nadu such as the Amaravathy, Bhavani and Noyyal rivers, and groundwater. Karnataka was awarded 270 tmc ft; Kerala, 30 tmc ft; and Puducherry, 7 tmc ft.

River water disputes rarely yield to simple solutions. Of India's 18 major rivers, 17 are inter-State. There are many water-sharing conflicts, and there is no solution in sight for any of them. Political calculations have limited the space for science and mathematics in devising solutions, and therein begins the problem. External factors ranging from the burden of history to games of political one-upmanship bring into the equation elements that cannot be predicted, much less tackled without collateral damage.

In the case of the Cauvery basin, Tamil Nadu has been the historical favourite. A bias perpetuated over a century does become the norm, but it does not necessarily become just. Karnataka sees both the 1892 and 1924 agreements between the Madras Presidency and the princely state of Mysore as unjust. A dispassionate look at the agreements, brokered by the colonial rulers, makes it clear that the British were on the side of the Madras Presidency, a key constituent and financial contributor to the Empire.

## Perceived sense of being wronged

It is this perceived sense of being wronged, plus a bunch of politicians trying to find relevance, that has often inflamed passions in Karnataka. The State has repeatedly used all avenues at its disposal to reverse the historic injustice. In August 2003, for instance, the State Cabinet proposed that the river's water be shared with Tamil Nadu only for drinking purposes (most of Cauvery water is used for irrigation; a small percentage is used up by

industries). This was again a bad monsoon year, and Karnataka was ready to defy the Union government if it was asked to release water for purposes other than drinking.

There have been instances of Prime Ministers intervening to sort out an impasse. There was a deficit monsoon in 1998, when the short-lived second Vajpayee government was in power. Durai Murugan recalled: "Karunanidhi spoke to Vajpayee, who was campaigning in a north Indian State, and told him that Tamil Nadu could not survive without water being released immediately. Vajpayee told Karunanidhi that he would be back in Delhi by 4 a.m. the next day and asked him to send an emissary." When Durai Murugan met the Prime Minister in Delhi at 5 a.m. the next day, Vajpayee was well informed of the situation. He spoke to J.H. Patel, who was then the Chief Minister of Karnataka, and water was released.

As the south-west monsoon failed this year, Tamil Nadu rushed to the Supreme Court. In early September, the Supreme Court ordered Karnataka to release 15,000 cusecs of water each day. Though there were protests, Chief Minister Siddaramaiah released water "with a heavy heart".

The script went terribly wrong on September 12. Hardliners and fringe elements always love a compromise/status quo worked out by the institutions that hold up democracy. There is, after all, no better occasion to air perceived grievances and whip up passions. The Bharatiya Janata Party's (BJP) State president, B.S. Yeddyurappa, ironically the same man who cooperated with Tamil Nadu during an earlier crisis, visited Mandya on September 10 and spoke provocatively. The trouble in Bengaluru began soon after. News reports and interviews indicate that though there was some trouble even earlier in Mandya and Bengaluru, it was sporadic and unplanned.

## BJP's role

The State BJP's tweets were in line with Yeddyurappa's speech: "BJP Karnataka: I Insist CM to take clear stand on #CauveryIssue. We are with CM if he takes firm decision & stops further release of water to TN: Sh. @BSYBJP."

This tweet followed the Supreme Court directive! Taking their cue from the State BJP

handle, most BJP supporters and elected representatives followed suit. BJP MLA C.T. Ravi tweeted: "Shocked & Pained at Supreme Court verdict on #Cauvery water release to Tamilnadu. Don't think Court realizes the meaning of Live & Let Live."

Tamil Nadu BJP president Tamilsai Soundararajan described the Karnataka unit's stance as "quite unfortunate". "In response to a question on the Karnataka unit of the BJP protesting against the water release, Ms. Soundararajan said that it was quite unfortunate and added that the Tamil Nadu unit of the party would continue to stand with the Tamil people for getting the rightful share of water," said a report in The Hindu on September 10. In her interactions with the press and tweets, she blamed the Congress and defended the BJP. "Cauvery issue: Farmers protesting against central Govt. is wrong - Tamilsai Soundararajan," she tweeted on September 9. On September 14, she demanded Siddaramaiah's resignation.

Soon after the first round of violence, the Bengaluru police drove home the message that violence would not be tolerated. Sample this tweet from Abhisekh Goyal, IPS, from September 15: "Hate messages reg #CauveryIssue maybe liable for- 120B (conspiracy), 153A (promoting enmity), 153B & 109 IPC for abetment of any resulting crime." Television images of a Tamil truck driver being beaten and stripped on the outskirts of Bengaluru, Tamil businesses being attacked and arson at a private bus terminus in Bengaluru stirred emotions in Tamil Nadu. In Tamil Nadu, there were attacks on Kannadiga pilgrims near Rameswaram, a group of tourists near Sirkazhi, and a hotel in Chennai. The regional media in both States played up the incidents, feeding on people's insecurities.

The Union Information and Broadcasting Ministry issued an unprecedented advisory on September 13 urging the media to "exercise restraint while covering incidents of violence and rioting, not to carry news in such a way that incites violence, to exercise care in the choice of words while reporting incidents and to avoid telecast of live or file shots of violence or rioting". At the outset, the advisory says that "certain TV channels have been telecasting provocative and inflammatory news/programmes" and that "some TV channels have also been airing footage of violent incidents, rioting, etc. These

could further ignite tensions and reactions and could cause the law and order situation in both the affected States to deteriorate.” The Bengaluru Police Commissioner issued a similarly worded advisory the same day.

The passions ebbed, but on September 15 a horrific instance of self-immolation in Tamil Nadu threatened to throw both States back into another bout of no-holds barred violence. B. Vignesh, a member of the Tamil supremacist Naam Tamilar Katchi party, set himself on fire during the party’s rally in Chennai. He died in a local hospital the next day. A day before the rally, Vignesh hinted of his intention on his Facebook page in Tamil: “In tomorrow’s procession, there are chances of many protest suicides. I request the media to cover live the procession since they will be able to increase their TRPs. At least then, may the Tamil rise in anger. Let a student protest explode in this soil.” A senior journalist, Shabbir Ahmed, asked on Twitter: “Naam Tamil Katchi has officially released pictures of one of its cadre setting himself ablaze. What are they trying to do?”

The suicide raised many questions. Did the party and Vignesh’s friends not notice the post? If they did, did anyone not speak to him?

## Heart-warming stories

Tightened vigil in both the States ensured that the incident did not set off another round of death and destruction. While the police in Bengaluru were pilloried for their inaction on the first day of the rioting, police action in the subsequent days, especially in Tamil Nadu, was appreciated. Ajay Rajagopal, CEO of a private firm, shared on his Facebook wall a screenshot of Bengaluru-based Dhanasekar Mani, who was travelling from Tamil Nadu to Karnataka: “My KA registered car was escorted by a police van throughout my journey in Tamil Nadu. I told them I can take care of myself. But they gave full protection.” (Photo date: 13/09/2016, 13:50.)

Joyal Bindu’s narration on Facebook got over 10,000 shares:

“What happened today, I shall never ever forget. The incident has really touched me and my family with the exemplary display of chivalry, dedication, sincerity and security towards the general citizens by the #TamilNaduPolice.

“After my Onam holidays, I was travelling back to Bangalore. From Kollam I stopped at the toll gate over Madurai bypass. A polite lady Police Constable of Tamil Nadu Police noticing my Karnataka registered car advised me to park aside and said that I shall be escorted by Police in the wake of recent #Cauvery unrest. For me it didn’t make sense what she said. Escort a common citizen on the highway by the Police!?! I parked aside; soon 2 more KA registered cars joined and the motorcade from Madurai started at 10:00 am.

“I was unsure how long/far this escorting by the Police is going to go on. I believed, once the Madurai bypass limits are crossed, we will be on our own. But No! A relay of at least 7-8 Police Cabs with personnel took over from various check-posts to usher us safely on the highway. From a convoy of 4 vehicles we were in total of 16 vehicles by the end of day. As the sun started setting, I realised we started all this in the morning and the enthusiasm of the TN Police is still persistent only to ensure that we cross the TN State safely and enter Karnataka. Before I could stop by to thank the Policemen for ensuring our safety, the Pilot vehicle took a detour and faded into darkness with no expectation of goodwill or thanks letting us to proceed with our journey towards Bangalore.

“By 9:00 pm we safely entered Bangalore city. A closely monitored and controlled police escort for common citizens for over a distance of 350+ kms! Oh goodness me, it should be a joke, but hell no! May God Bless them with more power and bless our country with such zealous people for law and order.”

## Back to Supreme Court

Once the law and order problems were sorted out, the fight was back in the Supreme Court. Karnataka, which initially maintained that it would be able to release 10,000 cusecs, now hardened its stand, and said that it was not in a position to release any water. Over the various hearings, the bench reduced the quantum of water release from 15,000 to 12,000 to 6,000 cusecs. Karnataka opposed each of these releases.

In 2002, the Supreme Court had pulled up the then Karnataka Chief Minister for contempt of court. Siddaramaiah does not seem to mind creating a constitutional crisis. What is important is that he offset the political

damage that releasing water would cause, with or without a court order.

Siddaramaiah got his Cabinet to “defer” release of water to Tamil Nadu and convened a special session of the State Legislative Assembly on September 23 to discuss the issue, in open defiance of the court’s September 19 order. The House adopted a unanimous resolution noting that the combined storage of the four system reservoirs was 27.6 tmc ft: “It is now resolved to direct that in this state of acute distress it is imperative that the government ensures that no water from the present storages be drawn, save and except for meeting drinking water requirements of the villages and towns in the Cauvery basin and for the entire city of Bruhat Bangalore.

“The above resolution is unanimously passed after carefully considering the needs of the inhabitants of the State of Karnataka whose interests are likely to be gravely jeopardised if water in the four reservoirs is in any way reduced—other than for meeting the drinking water requirements of inhabitants in the Cauvery basin including the entire city of Bangalore.” Karnataka’s defiance has created a constitutional crisis of the kind India has never seen before. No doubt, the Supreme Court exacerbated the situation with a series of orders and directions over nearly 30 years, but never before has an elected government tried to pit the legislature against the judiciary. “It is time that the Central government intervened in the matter before the Supreme Court acts,” said Durai Murugan, adding that Karnataka’s decision would strike at the root of federalism in India. “Tomorrow there is no reason for any State government to obey a ruling of the Supreme Court. This is dangerous and will tear at our democratic fabric,” he said. The Centre can direct a State under Article 256 of the Constitution to comply with a certain directive (in this case the ruling) and can also invoke provisions under Articles 365 and 356 if the State does not comply.

## Plight of delta farmers

Where does all this leave the delta farmers in Tamil Nadu who wait for the Cauvery water to start agricultural operations in the delta districts? The Cauvery delta area of 14.47 lakh hectares includes 20 taluks of Thanjavur, Tiruvarur and Nagapattinam districts, five taluks of Tiruchi district, two of Cuddalore and one taluk of Pudukkottai district. This is just

over 10 per cent of the State's land area. Rice is the principal crop, either single- or double-cropped. A third crop of rice is sometimes grown during the summer in some parts. Since the north-east monsoon is usually heavy, rice is preferred in the period from September to December. Short-duration crops are cultivated during Kuruvai (June onwards) and, if water is available, in December-January and April-May. The thaladi, a kind of bonus crop, is a medium-term variety that is cultivated in September-November. But the main crop is the high-yielding samba, and the current problems centre around release of water for samba.

As of now, farmers have planted in 11 lakh acres, and the requirement is about 1 tmc ft a day. Keeping the dead storage at Mettur at 10 tmc ft, there is, as on September 24, about 38 tmc ft for agricultural operations in the delta districts—that is, if water is not diverted for any other use, including that of drinking needs. Farmers in the region insist that they have done as much water conservation as possible and vehemently deny that they have scant regard for the resource. Direct sowing is one of the most effective water conservation methods they have employed; and the farmers insist that as much as 70 per cent of the area is covered by direct sowing now. At the current rate of water release of about 12,000 cusecs a day, the tail-end areas of the delta will not get adequate water for the crop because the daily demand is about 23,000 cusecs. The delta farmer at the tail end is now at the mercy of the monsoon to save the whole planted area.

The political problems come at a time when studies have pointed to shrinking paddy coverage. A Madras Institute of Development Studies (MIDS) report ("Combating Climate Change: Vulnerability of Cauvery Delta, Food Security and Livelihood Resilience"), due to be completed by December 2016, anchored by Professor S. Janakarajan, says that the area under paddy in the delta had shrunk alarmingly even as kuruvai as a paddy season was under threat. "Samba was now the only cropping season in areas that did not depend on groundwater for irrigation and that exposed it to the vagaries of nature leaving samba paddy at the mercy of the monsoon depending on the water release from upstream," says the report, according to L. Renganathan of *The Hindu* (October 8, 2015). Asked what could be a way forward given the

present problems, Janakarajan told *Frontline* that there needs to be some cooperation between the two States. "There is no sign of cooperation right now. They need to come down from their current positions," he said. Janakarajan was of the opinion that once the political climbdown happens, civil society leaders on both sides can work towards a solution. There are meetings scheduled in Bengaluru and at MIDS in Chennai over the next few weeks to bring together such leaders and work towards a solution. His confidence stems from the fact that the farmer-to-farmer initiative, which was the basis of the Cauvery Family, had produced significant results for a decade from 2002 to 2012. This, combined with water conservation measures, shifting crop patterns in tandem with other parts of the basin, regular desilting of the basin's irrigation channels, tanks and other such structures, strict enforcement of pollution norms along the Cauvery, and, above all, transparency of all operations in the basin area will be the way forward, civil society leaders feel.

## Solutions and more

As things stand, neither Tamil Nadu nor Karnataka can be seen as backing down. After the desperate plea made by Karnataka in the Supreme Court, Tamil Nadu's submission prayed for a rejection of the Supervisory Committee's order dated September 19:

"Assuming and not admitting the decision of calculation of inflows based on 56% of flows (as per the Committee) during the current irrigation year, the flows due to Tamil Nadu on a pro rata basis as contemplated in the Final Order for the period ending September 2016... would be 17.5 TMC ft. This Hon'ble Court may be pleased to direct Karnataka at least to release this quantity of water at the earliest."

In a 2013 article in *Economic & Political Weekly*, reproduced in *Water: Growing Understanding, Emerging Perspectives* (Readings on the Economy, Polity and Society; edited by Mihir Shah and P.S. Vijayshankar, 2016), the Cauvery expert Ramaswamy R.Iyer argues that as long as Karnataka's sense of injustice remains, it will not constructively cooperate in the implementation of the award. "It is therefore necessary to moderate that grievance to some extent. An adjustment of 20 or 30 tmc in the allocations will take care of the points raised by Karnataka, and will remove

the grounds for any feeling of injustice.... A voluntary gesture on TN's part will transform the situation dramatically." Iyer proposes this in return for an assurance of monthly release on the part of Karnataka and a distress formula being worked out.

"A fundamental deficiency in the Indian river dispute settlement procedures is that they directly jump from negotiation to compulsory legal adjudication without providing for intermediate voluntary processes such as mediation, conciliation and voluntary arbitration," notes S. Guhan in *The Cauvery Dispute: Towards Conciliation* (a *Frontline* publication), which remains an authoritative work on the issue. Looking back at the issue, Guhan points out that "what was missing, in essence, was an effort to mediate and conciliate differences between Karnataka and Tamil Nadu during the process of negotiations. This could have been done, if at all, by Government of India. But this it failed to do in any persistent or sustained manner."

## Beyond Cauvery

Colonial agreements may not be the best way to share river waters, but the management of most inter-State rivers are guided by them. Sections 130 to 132 of the Government of India Act, 1935, limits States' use of inter-State river waters, although water supplies, canals and drainage are on the State list. Article 262 of the Constitution empowers Parliament to adjudicate on "any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State river or river valley." Article 262 (2) provides for special tribunals. Tribunals, so far, have not achieved much.

Water conservation and usage are problem areas in both States. Andhra Pradesh and Tamil Nadu have legislation on participatory irrigation management aimed at, among other things, reviving the traditional tanks. Despite this, well-driven irrigation meant that farmers did not concentrate on tanks management. Crop diversification, reducing rice cultivable area marginally, and shifting to less water-guzzling varieties of rice have been among the suggestions that many experts have been talking about. But as long as the government, the main procurer of rice, gives a higher support price for rice than for other crops, farmers will be tempted to grow rice alone.

<http://www.frontline.in/cover-story/cauvery-conflict/article9153302.ece>

# Talk Over

## Ganga will start drying up in next 25 years: BD Tripathi

August 1<sup>st</sup>, 2016, The Indian Express, Vikram Sharma



**VARANASI :** In the late 1960s, BD Tripathi, a professor at the Banaras Hindu University, took his mom for a holy dip to the river Ganga. He

spotted the carcass of a cow floating in the river, with vultures preying on it. "Maa, the Ganga is polluted," he remarked, pointing to the carcass. "What is wrong with you," his mother shot back. "The holy Ganga can never be polluted. It is the most sacred river." After decades of painstaking research, Tripathi is now sure that the Ganga is not just polluted, it is also on the verge of a disaster. The river will start drying up in a majority of areas over the next 25 years, shows his studies. "The Ganga cannot be cleaned now. The idea should now be to save the river as its very existence is in danger," he says. Plans are many and funds abundant. Successive governments have been cautioned about the imminent disaster. Yet, very little progress has been made. "I can tell you this much. The Ganga will clean itself in the years to come if we don't do it. And, it will be something like the Kedarnath disaster of 2013," says Tripathi, a leading environmental scientist.

*In an interview with Express, the environmental scientist B D Tripathi, Member of the National Ganga River Basin Authority explains how the 'Clean Ganga' campaign has been hijacked by successive governments for political gains.*

### Q. What do you make of the clean Ganga call by the PM?

**A.** Based on my decades of research, I can tell you that pollution is a secondary issue now. The main challenge now is to save the holy river. By cleaning the ghats or announcing grandiose plans, nothing can be achieved. Modi has already earmarked `20,000 crore for cleaning the Ganga and that's all he can do. The officials concerned have to now take it forward.

### What makes you say Ganga cannot be cleaned now?

There are 30 drains - big and small - in and around Varanasi which discharge sewage into Ganga. There are three sewage treatment plants - one with a capacity of 80 million litres per day (MLD), second with a capacity of 12, and the third with a capacity of 10 MLD. According to government's own estimates, 300 million litres of sewage is generated per day. The three treatment plants take care of around 102 MLD, but what about the remaining 198 MLD being discharged into Ganga everyday? All governments had announced that they would set up more sewage treatment plants, but that had remained only on paper for the last 30 years. Moreover, we have the major problem of dead bodies being burnt and partially burnt bodies being tossed into Ganga along with other material and ashes. After all this, can Ganga be cleaned? We can now work only to save it.

### What about industrial waste?

There are 1,200 small scale industries in and around Varanasi and not one has a sewage treatment plant. They create industrial waste which comprises of lead, cadmium, copper and other toxicants. There is no provision to at least remove the heavy metals. All this is injected in the sewer, which ends up in the river. The highly contaminated water is used for agriculture across Varanasi. One can find large traces of these heavy metals in fruits, grains and crops. I have investigated the matter for years and submitted a report, but nothing changed.

### But at some point earlier, was there a possibility of Ganga being cleaned?

That seemed a possibility before 1990s when pollution was far lower than what it is today. There has been a rapid decrease in the flow of water. The dilution capacity of Ganga has reduced and therefore, the priority now has to be to save Ganga. Cleaning is secondary.

### You have been member of NGRBA, State Ganga River Conservation Authority. What was done in the last few decades?

In 2009, Ganga was declared a national river and the then prime minister, Manmohan Singh, chaired a meeting. I gave him a detailed presentation. That was all. Money

was allocated, but all plans remain on paper till date. Ganga flows through five states of Uttar Pradesh, Uttarakhand, Bihar, Jharkhand and West Bengal but there has never been any coordination between these states and the Centre. Successive governments have spent no less than `15,000 crores to clean Ganga. Nobody knows where the money went and what work was done. Accountability is nil. Now Modi has announced a `20,000 crore for Narmada Ganga programme.

### What do should be done now?

Firstly, rope in all five state governments. Have a multi-disciplinary approach, involving people from different walks of life. The immediate step can be to have five small sewage treatment plants in and around Varanasi and involve people in the preservation process. Blasting works in Uttarakhand, which is a seismic zone, have to be stopped immediately, or it would be disastrous to the 450 million people who live in Ganga basin.

### How else are you contributing to save Ganga?

I now intend to create river engineers. Recently, I have set up Mahamana Malaviya Research Centre for Ganga, in Banaras Hindu University wherein we will teach students about all river bodies, particularly Ganga. We will collect and collate data as such a centre does not exist anywhere in India currently. Even today, there is no proper data on Ganga and through an integrated approach, we will try to find solutions and place them before the Governments. We need more river engineers today.

<http://www.newindianexpress.com/nation/2016/aug/01/Cleaning-wont-do-save-Ganga-Tripathi-member-of-National-Ganga-River-Basin-Authority-1500017.html>

## Dying Devika in Udhampur to get fresh lease of life

12/08/2016, Daily Excelsior, Jammu, Avtar Bhat

The dying Devika in Udhampur town will get a fresh lease of life as Government has proposed to formulate a Rs 60 core project for the rejuvenation of the river under the National River Conservation Plan (NRCP).

The action by the State Government was taken following a letter written by Union Ministry of Environment, Forest and Climate Change to State Government suggesting taking up of urgent necessary action for pollution abatement of Devika. It also asked the State Government to prepare a detailed project report of the river for sewerage and sewage works as per the existing National River Conservation Plan (NRCP) guidelines of the Ministry.

According to authoritative sources, the district administration of Udhampur has already constituted a Committee in this regard under the name Devika Rejuvenation Committee (DRC) which is headed by Deputy Commissioner Udhampur, Neeraj Kumar as its chairman.

Under the Devika Rejuvenation plan, a sewerage treatment plant will be established for Udhampur district for diversion of entire sewerage water into it which is presently flowing into the sacred Devika river and has converted it into a drainage nallah. The Government has identified 10 kanals of land for the same. The project will be broad based and its DPR will be prepared on a prospective plan not only keeping in view the existing population of the town but also to cater to the needs of the people for next four decades, sources added.

The river, which has lot of religious significance and for the Hindus of the State, it has the same significance which the Ganga has for the Hindus of the entire country, sources said. But the river has been reduced to a drainage nullah at present as entire sewerage and sewage water of Udhampur town including waste of hospitals and hotels flows through it, sources added.

They said it has been a cause of concern for the environmentalists of the State who also raised the issue many times demanding restoring the sanctity of the sacred river.

A meeting of the concerned departments including Urban Environmental Engineering Department, Irrigation and Flood Control Department, Pollution Control and Forest Department and Udhampur Municipal Committee (UMC) was held in the town today under the chairmanship of DC in which the rejuvenation of Devika Project was discussed threadbare.

The proposal will be submitted to Union Environment Ministry for funding, sources said. Conforming this the DC Udhampur, Neeraj Kumar told Excelsior that an extensive project report has been framed for rejuvenation of the Devika. He said the conservation of the river is not possible without giving a proper treatment to the sewerage water of the town which flows into the sacred Devika.

It may be recalled that the Union Minister in PMO, Dr Jitendra Singh was instrumental in rejuvenation of Devika at Udhampur keeping in view its religious sanctity. Soon after his election as MP from Kathua -Doda Lok Sabha seat, he took up this issue with Union Environment and Forest Ministry. Following his pursuance a team of experts was deputed by the Union Environment Ministry to Udhampur for complete survey of the river including sampling and soil testing etc.

The experts' team later submitted its report to the concerned Ministry. After the survey by the team, the Union Environment and Forest Ministry has sent a letter to the Principal Secretary Housing and Urban Development with certain suggestions for conservation of Devika on the basis of the report submitted by its team.

As per this letter of the Union Forest and Environment Ministry it pointed out that there is no sewerage system and sewerage treatment facility in Udhampur town and the existing system of sewerage management in the town is in the form of septic tanks, soakage pits and direct discharge in the various drains from individual households.

The letter further said the overflow from septic tanks is also being discharged into various drains which finally flow into Devika. There are approximately 16 drains which are currently being discharged into Devika and contribute in its pollution to optimum level, the letter added. It stressed that keeping the river pollution free the practice of discharging untreated

sewerage into the river be immediately stopped and drains, nallahs discharge be tapped. The Union Environment Ministry also suggested augmentation of flow in the river by review of diversion of water and removal of sediments, removing garbage from Devika in the stretches of Udhampur along with some dredging depending on the situation, afforestation along with water shed management programme be undertaken in the catchment of Devika river to enhance water enrichment in the catchment area. Besides, a comprehensive proposal be prepared by Udhampur Municipal Committee for sewerage and solid waste management in the drainage area of river Devika, It added.

The letter stressed that all the drains should be tapped in the time bound manner and diverted to sewage treatment facility and treated drainage water should be discharged downstream of MH road bridge. It further said that a comprehensive proposal based on the National River Conservation Plan (NRCP) guidelines be submitted to the National River Conservation Department (NRCD) through State Government for financial assistance under NRCP.

Moreover it suggested that UMC should take up necessary steps for collection of entire municipal solid waste generated and its treatment processing preferably through waste to energy route like RDF for its ultimate disposal/ use in cement kiln which already exist in the State.

The letter also stressed that for total conservation of Devika and preserving ecology of the Udhampur town the dumping of solid waste should be done in a scientific manner adhering to MSW rules so that the run off does not pollute the river Devika till the plant is commissioned. In addition to this all the hotels and hospitals in the watershed of river Devika should have proper ETP for the treatment of waste water and State Pollution Control Board should ensure compliance of consent conditions by all the hotels and hospitals and perform regular monitoring of river Devika.

The Union Environment Ministry also suggested strict imposition of ban on use of plastic carry bags as per provisions of the J&K Non Biodegradable Material Management Handling and Disposal Act 2007.

<http://www.dailyexcelsior.com/dying-devika-in-udhampur-to-get-fresh-lease-of-life/>

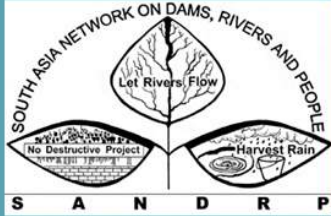


# NGO Vignettes



**South Asia Network on Dams, Rivers and People**  
working for water resource development as if democracy, people & environment matter

## South Asia Network on Dams, Rivers & People (SANDRP)



SANDRP is an informal network of organisations and individuals working on issues related with water sector with special focus on issues associated with large dams, mostly in India but including South Asia regional issues. SANDRP's broad objective is to work on these issues so that democracy, people and environment get due place. Started in 1998 SANDRP's activities include monitoring, research, documentation, networking and awareness building among organisations and people related to these issues. SANDRP publishes a journal "Dams, Rivers & People"

We welcome comments, suggestions about the website. Please write to SANDRP

**South Asia Network on Dams, Rivers and People (SANDRP)** is an informal network working on issues related to rivers, communities and large scale water infrastructure like dams: their environmental and social impacts, their performance and issues related to governance of rivers and dams.

This blog is our effort to comment on happenings related to Dams, Rivers and People across India and beyond. We also hope to share SANDRP's work through this medium and to create a platform for an informed debate and discussion on these issues, through comments. Some of the issues raised here do not receive the necessary attention through mainstream media.

SANDRPs work focuses on outreach, awareness generation, dissemination and advocacy. To take this work forward, your comments and suggestions are welcome.

To know more about our work, please visit: [www.sandrp.in](http://www.sandrp.in)

You can find us on Facebook at <http://www.facebook.com/sandrp.in>

You can **contact** us at : [ht.sandrp@gmail.com](mailto:ht.sandrp@gmail.com), [parineeta.dandekar@gmail.com](mailto:parineeta.dandekar@gmail.com)

## Uttar Pradesh State Ganga River Conservation Agency

<http://sgrca.org/>



## About UPSGRCA

In exercise of the powers conferred by sub section (3 of section 3 of the environment (Protection) Act 1986(29 of 1986) the Central Government in continuation to Constitution of NGRBA on 20th February, 2009, vide notification No.1570 Dated 30th September 2009 constituted the Uttar Pradesh State Ganga River Conservation Authority (SGRCA) for taking measures for effective abatement of pollution and conservation of the river Ganga in the State of Uttar Pradesh. (F.No.A-12011/7/2009-NCRD-II)

And Whereas the State Government is required to coordinate and implement the river conservation activities at the State level for taking steps for comprehensive management of the river Ganga in the State.

## Objectives

Main object of Agency is pollution abatement in River Ganga and it's environmental / ecological improvement and to achieve it's object there are following objectives of the agency:-

- To implement River Basin Management Programme prepared and approved by the National Ganga River Basin Authority & U.P. State Ganga River Conservation Authority.
- To monitor the executed programme of National Ganga River Basin Authority at State level and to evaluate and audit itself or to get it evaluated and audited.
- To prepare the annual work plan of U.P. State Ganga River Conservation Agency and obtain it's approval of the U.P. State Ganga River Conservation Authority/concerned Authorities.
- To facilitate smooth implementation of approved yearly work plan.
- To Supervise and Coordinate the activities necessary for pollution control and treatment for maintaining the quality of water in river Ganga.
- To implement the recycling and reuse of water, rain water harvesting, decentralized sewage treatment system, water conservation and conservation procedures.
- To facilitate State Government and / or local bodies in issues related to the land acquisition, removal of unauthorised encroachments, contracts for the purpose of implementation of instructions of National Ganga River Basin Authority and U.P.State Ganga River Conservation Authority.
- Study of researches for achieving above objects and to prepare case studies.
- To encourage participation of all sections of communities including females for equitable and uniform development for ensuring water quality in river Ganga.
- To develop proper knowledge and effective communication with all stockholders for fulfillment of above objects; and
- Other works which may help the agency in fulfilling the above objects.

Contact Us

**Uttar Pradesh State Ganga River Conservation Agency**

Registered office / Head Quarter

U.P.Jal Nigam Training Center 2,

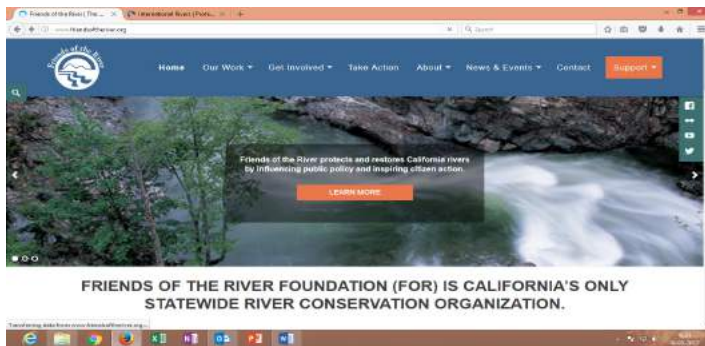
Lal Bahadur Shastri Marg, Lucknow-226001

**E:** [contactus@sgrca.org](mailto:contactus@sgrca.org) **P:**+91-522-2235542 **W:** [www.sgrca.org](http://www.sgrca.org)

# Open Window

## Friends of the River

<http://www.friendsoftheriver.org/>



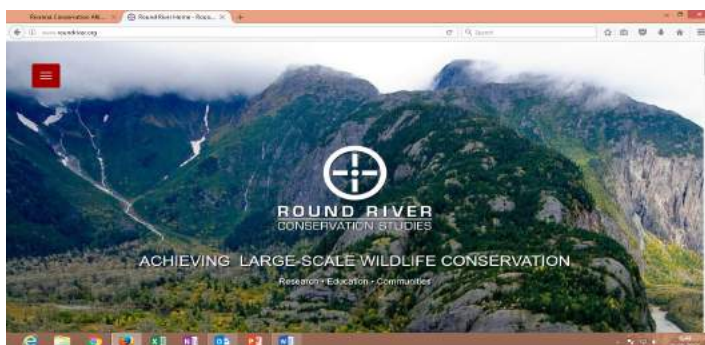
## International Rivers

<https://www.internationalrivers.org/>



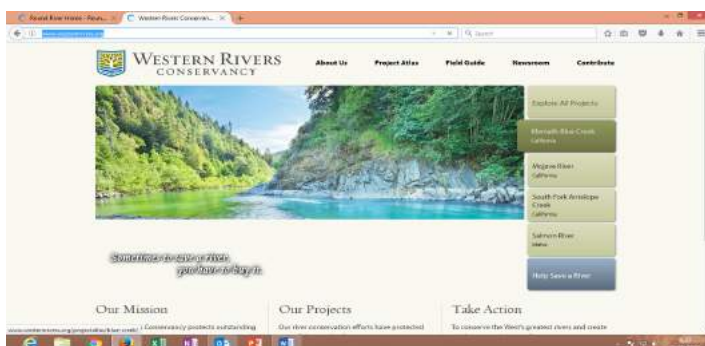
## Round River

<http://www.roundriver.org/>



## Western Rivers Conservancy

<http://www.westernrivers.org/>



## Rivanna Conservation Alliance

<http://www.rivannariver.org/>



## Deschutes Rivers Conservancy

<http://www.deschutesriver.org/>



## Texas River Protection Association

<http://www.txrivers.org/>



## Parker River Clean Water Association

<http://www.parker-river.org/>







# CMS Environment

Promoting Responsibility

Established in 1991, CMS has carved out a niche for itself as a research based think tank committed to rigorous and objective analysis to support improved policymaking.

CMS Environment, the team behind all the environmental endeavours of CMS, has been involved multifariously in policy research and programme evaluation aimed at creating sustainable solutions for environment protection. CMS Environment Team has also been consistently undertaken capacity building and enhancing initiatives with range of stakeholders to orient on contemporary environment issues like climate change, sustainable transport, conservation, etc.

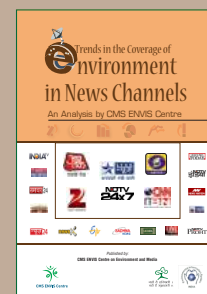
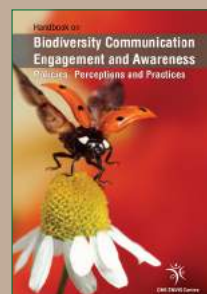
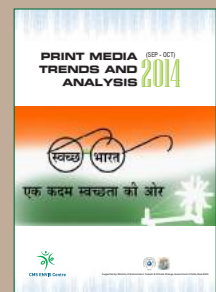
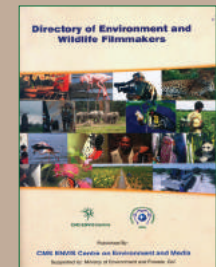
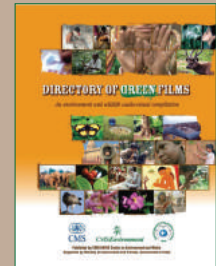
## CMS ENVIS CENTRE

Established in 2000, **CMS ENVIS is a premiere centre** designated by Ministry of Environment, Forests & Climate Change (MoEF&CC), Government of India to **facilitate information dissemination** and further the cause of environment awareness and sensitisation. A separate space in its campus has been allocated to house documentary films, spots/ public service messages, info-mercials, quiz programmes, jingles etc. on environmental and wildlife issues. [www.cmsenvis.nic](http://www.cmsenvis.nic)

## Green Films Resource Centre

Established in 2007, the Audio Visual Resource Centre (AVRC) is a state-of-the-art archive of documentaries, films and audio spots on environment and development issues.

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