

Condition Assessment and Management Plan (CAMP) **for Six River Basins** **(Mahanadi, Narmada, Godavari, Krishna, Cauvery & Periyar)**

First Meeting of Stakeholder Advisory Committee (SAC)

Date: 31/05/2024

Time : 10:00 -13:00 hrs

RECORD NOTES

First meeting of Stakeholders Advisory Committee was held on 31/05/2024 at Hotel Tuli Imperial, Nagpur chaired by Ms Debashree Mukherjee, Secretary, Do WR, RD& GR, Ministry of Jal Shakti, Government of India

Mr Rajeev Kumar Mital, Project Director & Mr. Pradeep Kumar Agarwal, Joint Secretary represented National River Conservation Directorate (NRCD), Do WR, RD&GR, Ministry of Jal Shakti, Government of India

Dr Vinod Tare, Founding Head & Emeritus Fellow, IIT Kanpur represented cGanga which is leading and coordinating the work done by the twelve institutes on six river basins, namely Mahanadi, Narmada, Godavari, Krishna, Cauvery & Periyar.

The participants who attended the meeting included experts and representatives of various institutes, and representatives of Government of India and State Governments of Orissa, Chhattisgarh, Madhya Pradesh, Gujrat, Maharashtra, Telangana, Andhra Pradesh, Karnataka, Tamil Nadu and Kerala (refer list at Annexure I).

The meeting started with Welcome address by Dr Atul Vaidya, Director, CSIR-National Environmental Engineering Research Institute, Nagpur who highlighted the role of CSIR-NEERI in the project.

In his opening remarks by Mr Rajeev Kumar Mital, Project Director, NRCD, DoWR, RD&GR, Ministry of Jal Shakti, Government of India mentioned that soon with the formation of new government we will have to prepare action plans and budget. The CAMP project should be oriented towards this and urged all twelve institutes and cGanga to focus on preparation of some early reports giving highlights of basins, eco-sensitive areas/stretches, hotspots in terms of pollution and flood management, etc.

Professor Vinod Tare, Founding Head, cGanga from Indian Institute of Technology, Kanpur introduced about CAMP activities and its preparation by 12 participating institutes from the basin states of six major rivers: Mahanadi (NIT Raipur & NIT Rourkela), Narmada (IIT Gandhinagar & IIT Indore), Godavari (CSIR-NEERI Nagpur & IIT Hyderabad), Krishna (NIT Warangal & NIT Surathkal), Cauvery (IISc Bengaluru & NIT Trichy) and Periyar (IIT Palakkad & NIT Calicut). He informed that three committees are formed for facilitating activities of CAMP Project:

1. Stakeholders Advisory Committee which is expected to give vision and direction for CAMP

2. Scientific & Technical Committee involving experts who were part of Consortium of 7 IITs (IITC) that prepared Ganga River Basin Management Plan (GRBMP 1.0)
3. Joint Review Committee for administrative purposes who can take decisions and

Dr Tare briefly mentioned about way ahead for realizing Water Vision@2047 and outlined challenges faced for making India water secure considering state-wise distribution of number of rainy days. He emphasized on infrastructure planning considering District as an Administrative Unit for managing rivers in Rural (Rural River Management Plan, RRMP) and Urban (Urban River Management Plan, URMP) areas for two distinct situations, namely when there is too much water for a short spell and almost no water for most of remaining period of the year and named it a 330-35 / 90-10 plan.

He proposed to convert black & brown water bodies into blue water bodies, reusing treated wastewater, interconnecting/networking of water bodies at local level and proposed the Framework of "Samarth Ganga" for River Basin Planning based on five pillars, namely Aviral Ganga, Nirmal Ganga, Gyan Ganga, Jan Ganga and Arth Ganga to ensure no/minimal disturbance in ability of rivers to continue to provide ecosystem services. This should be achieved involving public participation with focus on multi-purpose use of water bodies and maintaining health of rivers.

He also stressed upon the deliverables of the project which have been detailed in MoAs that have been signed by NRCD with various institutes.

The presentation by Professor Tare was followed by introduction of individual participants and release of "PRAGYAMBU", a quarterly Newsletter of cGanga in different Indian languages to disseminate valuable traditional and scientific knowledge assimilated from national and international sources on various aspects of management of water and river restoration and conservation among concerned institutions and citizens.

Representatives from various Central and State Government agencies/departments/ministries were then requested to highlight on studies conducted and plans prepared by various states for river basins and reflection on CAMP activities by various basin states of six rivers: Mahanadi, Narmada, Godavari, Krishna, Cauvery and Periyar. The highlights are as follows.

Mr P M Scott, Member (RM), Central Water Commission:

- ✓ water quality monitoring of six rivers at level 3 and lab level
- ✓ 41 parameters were observed by CWC
- ✓ Sediment studies of Cauvery and Narmada basins
- ✓ Inter-linking of rivers
- ✓ Catchment area
- ✓ Annual Water resource potential
- ✓ Utilizable surface water
- ✓ Hydro-meteorological observation sites
- ✓ Reservoirs, National projects & Hydro-electric projects
- ✓ Annual run-offs and flood forecasting

Dr Sunil Kumar Ambast, Chairman, Central Groundwater Board:

- ✓ Data availability from various systems
- ✓ Basic approach - thinking globally and locally
- ✓ Maximizing the profits
- ✓ Multiple objective programming
- ✓ Optimal use of resources
- ✓ Continuous brainstorming

Mr Suresh Babu, WWF, India (NGO):

- ✓ Involvement of local institutions
- ✓ Communication and outreach at local level
- ✓ 9 broad indicators that WWF works with
- ✓ Primary groundwater station
- ✓ Good network of citizens' engagement with group of local communities along with Forest Department of Tamil Nadu
- ✓ Pollution hotspots should be identified and monitored
- ✓ Environment assessment study for Moyar river flowing through Bandipur National Park, Karnataka
- ✓ Water requirement of terrestrial species
- ✓ River health assessment
- ✓ Suggested Agricultural study at Warangal in Godavari basin
- ✓ Cotton farmers package of practices being followed
- ✓ Change in hydrology of the basin
- ✓ There is a plan with IIT, Gandhinagar and MoEFCC to revive the rivers
- ✓ To generate weather related data

Dr Tanveer Ahmed, Wildlife Institute of India (WII), Dehradun:

- ✓ Ongoing project on "Assessment of ecological status of select Indian rivers for Conservation planning"
- ✓ Government has initiatives to clean and maintain flow of rivers
- ✓ He regretted that Government has never taken stand for species inhabiting the rivers
- ✓ Need for biodiversity assessment and mapping of habitat characteristics
- ✓ Pointed out that flow of Narmada river is threatened which earlier had good number of fishes and now there is extinction of some species
- ✓ Proposed Scheduled species protection system should be in place
- ✓ Lamented about decrease in Native fauna and increase of hazardous species like Lantana camera in Narmada river and reduction in avifauna
- ✓ Ghadiyal is endangered species in Narmada and has less number of turtles
- ✓ About Godavari river there is above-ground biomass, invasive species causing extinction of aquatic ecosystem, low number of fishes and extinction of economically important species
- ✓ Low number of reptiles in Godavari river
- ✓ Also Periyar river has low number of flora and fauna, abundance of species is very low
- ✓ Mahanadi has average number of species like herpetofauna, turtles, lizards and crocodiles

- ✓ WWF is assessing anthropogenic pressure hotspots of dumping sites
- ✓ Bioaccumulation and sand mining in the river basins
- ✓ Various awareness & Conservation programs are being carried out by WWF

Dr K Ravichandran, Director, Institute of Forest Management, Bhopal, M.P.:

- ✓ Ongoing project on Narmada landscape restoration in Madhya Pradesh
- ✓ Rejuvenation of Narmada river basin
- ✓ To join hands with global and local community leaders
- ✓ Landscape management on sustainable scale
- ✓ Baseline assessment and attempting 20% increase in groundwater level
- ✓ Suggested incentive based plans to be implemented
- ✓ Rainwater harvesting, ecosystems services model, evaluation
- ✓ Condition assessment and management plans for Narmada river basin

Dr Aashutosh Dash, Special Secretary, Government of Odisha:

- ✓ Work being carried out in Mahanadi river basin with Stakeholder's perspective
- ✓ Nothing much has come-up by states
- ✓ Need to understand entire basin of river
- ✓ Opined that anthropogenic activity is too much in Cauvery basin
- ✓ Spirit and nature of river need be studied
- ✓ Model of Nirmaldhara and Aviral dhara to be most important river conservation

Mr R R Singh, Environmental Conservation Board, Chhattisgarh:

- ✓ Studies carried out on Mahanadi river basin
- ✓ Rejuvenation plan, cleaning of river
- ✓ For Sampling, analysis, and monitoring water quality 14 STPs are set-up
- ✓ 11 STPs under construction in urban areas; 3 STPs under planning
- ✓ Data is being compiled

Mr K K Nahariya, Chief Engineer, WRD, Govt of Madhya Pradesh:

- ✓ Two basins selected for study
- ✓ Godavari (Wainganga) covering 51000 km in MP. & Maharashtra
- ✓ Exploitation of river water being restricted by MP government
- ✓ Pench river project ongoing
- ✓ Narmada river covers 97,000 sq.km, of which 88% catchment area under M.P.
- ✓ Shared by 3 states, plans to utilize water judiciously
- ✓ Suggest treatment of sediments, overdose of fertilizers to be restricted

Mr K A Patel, Director (Civil), SVNNL, Govt of Gujarat

- ✓ Narmada river basin at Kewadiya
- ✓ 80 lakh sanction for irrigation
- ✓ Hydro-electric power generation
- ✓ 25 km stretch at Bharuch
- ✓ Flood management plan implemented

Dr J B Sangewar, Joint Director, Maharashtra PCB, Government of Maharashtra

- ✓ Monitoring stations are more polluted as it has more monitoring stations

- ✓ Real time monitoring stations is the need of hour for Godavari river basin
- ✓ STP and CETP to be planned
- ✓ Water Resources Regulatory authority needed
- ✓ Data available for surface and ground water
- ✓ Observatory wells data available
- ✓ Narmada river ecosystem being monitored

Mr Prashant Patil, Special Secretary, CAD Dept, Government of Telangana

- ✓ Suggested most of the Institutes involve to regulate and monitor data properly
- ✓ Positive impact of humans : urban and rural
- ✓ Urban bodies have independent plans and should initiate mitigation plans in monsoons
- ✓ Rivers to be restored with natural flow
- ✓ IMD should have mechanism for rivers with Real time monitoring
- ✓ To restore lost capacities of basins instead of searching for new sites
- ✓ Better understanding and checklist be given highlighting roles and timeframe

Mr Narayana Reddy, ENC, Irrigation Department, Government of Andhra Pradesh:

- ✓ Godavari and Krishna basins being monitored and studies carried out
- ✓ Facing difficulties in managing river resources
- ✓ Due concern be given for Andhra Pradesh
- ✓ Holistic plan required
- ✓ 10 locations from Godavari and 8 locations from Krishna being studied
- ✓ Regularly communicating data

Dr Shanth A Thimmaiah, Chairman, Karnataka Pollution Control Board:

- ✓ Krishna and Cauvery basins being monitored, and studies carried out
- ✓ 17 polluting tributaries mainly Arkavati river and 6 rivers tributaries of Krishna basin
- ✓ As per CPCB directions, action plans are prepared and river rejuvenation committees are set-up
- ✓ Sewage treatment plants being monitored
- ✓ Action plans drawn for quantifying sewage in river basins
- ✓ 331 water body monitoring stations
- ✓ 6 Operational treatment plans established, sharing of data for the same with Water Resources Department of Karnataka
- ✓ Looking forward to aspects on water quality, water modelling, management and water policy of State and implementation of road map accordingly

Mr K Murugan, Special Secretary, Water Resources Department, Government of Tamil Nadu

- ✓ Cleaning of Cauvery river and its tributaries undertaken
- ✓ Ongoing project 'Nandanthal Vaazhi Cauvery' for revamping river system
- ✓ Polluted locations at Trichy, Noyyal, Bhavani bathing ghats due to increased industrialization
- ✓ Crematoria around the rivers is a major concern
- ✓ Consultant needed for project report

- ✓ Funding required for carrying out the activity
- ✓ 18 corporations and 64 municipalities to monitor river front development, biodiversity monitoring
- ✓ Infringement should not be there and study on water demands should be based on supply and demand
- ✓ Five year study undertaken

Mr Ashok Kumar Sen, Principal Secretary, Government of West Bengal

- ✓ River quality standards to be maintained
- ✓ Instead of cGanga (Clean Ganga), there should be sGanga (Samarth Ganga)

After the presentations, the Chair opened the floor for comments and suggestions and requested to brief on the plans under preparation and implementation, and requirements, if any. The following points and concerns were raised:

- Mr Priyesh R, Chief Engineer, Government of Kerala, briefed about challenges in managing discharges in river buffer zones and asked how to proceed about it.
- Representative of Government of Gujarat proposed that there should be technical guidelines for flood prone zones, enactment and support.
- NRCDC is providing finance for STPs – continuous monitoring should be implemented.
- Ecological assessment, hydrological planning, legal aspects be investigated and sensitization of sensitive areas and data sharing for working on it be considered.
- Dr R Biniwale from CSIR-NEERI, Nagpur spoke about secondary data availability and need for data collection mechanism. Also, for a Letter to State Government to facilitate collation of data and information for preparation of action plan with mention about basin boundaries for States.
- Representative from Government of Kerala talked about Periyar river stretch and mentioned about sediment study data requirement. Letter from Ministry requested to identify Nodal person to be contacted for implementation of plan. Emerging contaminants should be identified and documented and data compiled by NMCG.
- CPCB mentioned about action plan on flood plain management, and requirement of baseline information, assessment reports, and infrastructure, setting some benchmarks. Since water is being used for agricultural purpose, Ministry of Agriculture should be involved.
- NIT Warangal spoke about Krishna River basin and expected secondary data from all sources. Proposed basins wise state level stakeholder committees for generating basic data.
- All institutes requested to identify and appoint a nodal officer from the basin states for coordinating with the concerned institutes for each of the six river basins.

Ms Debashree Mukherjee, Secretary Do WR, RD & GR, MoJS, GoI in her closing remarks elaborated on action plans and outline of work to be implemented. Highlights are as follows:

- Floodplain Zoning Guidelines: CWC has developed technical guidelines for floodplain zoning, which will soon be circulated to states for comments. The guidelines will be finalized after receiving the comments from the states.
- Monitoring and Implementation: The implementing agency should not be involved in monitoring. A third party or in the interim the State Pollution Control Board is suggested as a potential monitoring body.
- Holistic River Management: The river is a system including tributaries, water bodies, forests, catchment areas, human, flora, and fauna elements. It is important to manage it as a system rather than treating each in isolation.
- Learning from Ganga Project: The work on Ganga is ongoing, and the approach used in the Ganga project is being extended to other rivers.
- The Healthy River financing program is being designed with the World Bank to support river health improvements.
- Water Storage and Climate Change: how to store more water to address climate change and using this storage to manage our rivers eventually. Also, deterioration of river catchment area should also be considered. Emphasis on improving management of dams, reservoirs, and surface water bodies.
- Assessment of River Health: River health is an interpretation of quality of action. Improvement of BOD is an indicator of river health but for common citizens visible evidence like increase in riverine dolphin is an indicator of improved Ganga river health.
- Baseline and Management: The need for a comprehensive baseline assessment of river basin is necessary. The states must start thinking about this framework and suggestions from stakeholders in terms of creating this framework are very important. The states should own the condition assessment and the management plan.
- Coordination Among States: States are urged to designate a nodal department and officer to coordinate with partnering institutions. The collaboration among various state departments is important for effective water management.
- NRCDC to soon notify State Level Committees for each basin states for all six rivers with inputs from the concerned institutes involved in CAMP Project.
- Long-term Partnership: It is important to have a long-term partnership between state governments and local institutions for river health initiatives.

Mr Ashok Babu, Director, NRCDC, Do WR, RD & GR, Ministry of Jal Shakti, GoI proposed Vote of Thanks to the Chair, all participants to the meeting and organisers for making excellent arrangements.



Annexure 1: List of Participants

S. No.	Name	Designation	Institute/Organization/Dept.
1	Dr. Aneesh Mathew	Assistant Professor	NIT Trichy
2	Dr. Anindita Majumdar	Associate Professor	IIT Hyderabad
3	Dr. Basavaraju Manu	Professor	NIT Surathkal
4	Dr. J. B. Sangewar	Joint Director	Maharashtra Pollution Control Board
5	Dr. K. Ravichandran	Director	Indian Institute of Forest Management, Bhopal, Madhya Pradesh
6	Dr. Kishanjit Kumar Khatua	Professor	NIT Rourkela
7	Dr. Manish Kumar Goyal	Professor	IIT Indore
8	Dr. Mayur Shirish Jain	Assistant Professor	IIT Indore
9	Dr. N. K. Verma	Chief Chemist	Madhya Pradesh Pollution Control Board
10	Dr. Nisha Radhakrishnan	Associate Professor	NIT Trichy
11	Dr. P. Athira	Associate Professor	IIT Palakkad
12	Dr. Pranab Kumar Mohapatra	Professor	IIT Gandhinagar
13	Dr. Praveen C Ramamurthy	Assistant Professor	IISc Bengaluru
14	Dr. R. L. Narendran	Environmental Scientist	Tamil Nadu Pollution Control Board
15	Dr. R. Manjula	Associate Professor	NIT Trichy
16	Dr. Rajesh Rajora	ACS	Water Resources Department, Madhya Pradesh
17	Dr. Ruchi Badola	Dean & Scientist-G	Wildlife Institute of India, Dehradun
18	Dr. S. Saravanan	Associate Professor	NIT Trichy
19	Dr. S.A. Hussain	Scientist-G (Retd) & Project Manager	Wildlife Institute of India, Dehradun
20	Dr. Sabita Madhvi Singh	Joint Director	National River Conservation Directorate, New Delhi
21	Dr. Santosh G. Thampi	Professor (HAG)	NIT Calicut
22	Dr. Shanth A. Thimmaiah	Chairman	Karnataka Pollution Control Board
23	Dr. Sujit Dholam	RO	Maharashtra Pollution Control Board
24	Dr. Sunil Kumar Ambast	Chairman	Central Ground Water Board, Faridabad, Haryana
25	Dr. Tanvir Ahmed	Project Coordinator	Wildlife Institute of India, Dehradun
26	Dr. Umamahesh NV	Professor (HAG)	NIT Warangal
27	Dr. Usha A	River basin management specialist	Advanced Centre for Integrated Water Resources Management, Karnataka
67	Dr. Vinod Tare	Emeritus Fellow and Founding Head	cGanga, IIT Kanpur
28	Er. Ashutosh Dash	Engineer-in-Chief cum Special Secretary	Odisha State
29	Mr. Abhishek Goel	Section Officer	National River Conservation Directorate, New Delhi
30	Mr. Ashok Deharia	Chief Engineer	Water Resources Department, Madhya Pradesh
31	Mr. Ashok Kumar Singh	Principal Secretary	Water Resources Department, Kerala
32	Mr. Borkar	Executive Director	Tapi Irrigation Dept. Corp.
33	Mr. Deepak Kumar	Director	River Conservation Directorate, CWC, New Delhi
34	Mr. H. R. Chouhan	Member (Engineer)	Narmada Valley Development Authority, Madhya Pradesh
35	Mr. Hemendra Nath Nayak	Chief Environmental Scientist	Odisha State Pollution Control Board
36	Mr. John Lakra	Additional Chief Engineer	Chhattisgarh Environment Conservation Board, Raipur
37	Mr. K. A. Patel	Director (Civil)	Sardar Sarovar Narmada Nigam Limited, Gujarat
38	Mr. K. B. Parmar	Chief Engineer	Sardar Sarovar Narmada Nigam Limited, Gujarat
39	Mr. K. Murugan	Special Secretary to Govt.	Water Resources Department, Chennai, Tamil Nadu
40	Mr. M. Subramanian	Chief Engineer	Water Resources Department, Trichy
41	Mr. Manoj K. R.		Kerala State Pollution Control Board
42	Mr. Neeraj Kumar Manglik	Chief Engineer	Monitoring Central Organization, CWC, Nagpur

43	Mr. Nelapthla Ashok Babu	Director	National River Conservation Directorate, New Delhi
44	Mr. P. M. Scott	Member (RM)	Central Water Commission, New Delhi
45	Mr. P. Somashekar Rao	Director Technical	Advanced Centre for Integrated Water Resources Management, Karnataka
46	Mr. Pradeep Kumar Agarwal	Joint Secretary	National River Conservation Directorate, New Delhi
47	Mr. Prasad Dasari		Telangana State Pollution Control Board
48	Mr. Prashant Jeevan Patil	Special Secretary to Govt.	CAD Dept, Telangana
49	Mr. Priyesh R.	Chief Engineer	Water Resources Department, Kerala
50	Mr. R. Subramanian	Chairman	Cauvery Technical Cell cum Inter State Waters Wing, Chennai
51	Mr. R. V. Patel	SEE	Gujarat State Pollution Control Board
52	Mr. Rajeev Kumar Mital	Project Director	National River Conservation Directorate, New Delhi
53	Mr. Rajesh K	Chief Engineer	Advanced Centre for Integrated Water Resources Management, Karnataka
54	Mr. Ram Ratan Singh	Superintending Officer	Chhattisgarh Environment Conservation Board, Raipur
55	Mr. S. Sivakumar	Superintending Engineer	Water Resource Department, Trichy
56	Mr. Saju Varghese	Asst. Exe. Engineer	Water Resources Department, Kerala
57	Mr. Samir Bajpai	Professor	NIT Raipur
58	Mr. Shashi Bhushan Kumar	Principal Secretary	Water Resource Department, Andhra Pradesh
59	Mr. Sivadasan	Chief Engineer, I & A	Water Resources Department, Kerala
60	Mr. Sontakke	Executive Director	Vidarbha Irrigation Dept. Corp.
61	Mr. Suresh Babu	Senior Director	Ecological Footprint, WWF
62	Mr. Sushil Kumar Srivastava	Scientist-F	National River Conservation Directorate, New Delhi
63	Mr. Thiru Sankara Subramaniam	Deputy Director	Tamil Nadu Pollution Control Board
64	Mr. Vijaykumar T. Kadakbhavi	Chief Environmental Officer	Karnataka Pollution Control Board
65	Mr. Vishal Gandhi	Scientist-E	Central Pollution Control Board, New Delhi
66	Ms. Debashree Mukherjee	Secretary	Do WR, RD&G, NRCDC, Delhi
68	Ms. Alpana Narula	Scientist-B	Central Pollution Control Board, New Delhi
69	Ms. M. Sree Ranjani	Joint Chief Environmental Scientist	Andhra Pradesh Pollution Control Board
70	Ms. Vinaya K. S.	Chief Environmental Engineer	Kerala State Pollution Control Board