

हरित गंगे  
GREENING GANGA

नमामि  
गंगे

पत्रिका

अंक-7 | जुलाई-सितम्बर-2018

गंगा वृक्षारोपण अभियान-2018



राष्ट्रीय स्वच्छ गंगा मिशन

जल संसाधन, नदी विकास एवं गंगा संरक्षण मंत्रालय,  
भारत सरकार

सत्यमेव जयते

उत्तराखण्ड की राजधानी देहरादून में माननीय मुख्यमंत्री श्री त्रिवेन्द्र सिंह रावत के आवाहन पर 'रिस्पना से ऋषिपर्णा' अभियान के अन्तर्गत ढाई लाख पौधों का रोपण किया गया। 22 जुलाई को आयोजित इस कार्यक्रम में राष्ट्रीय स्वच्छ गंगा मिशन व राज्य परियोजना प्रबन्धन गुप के अधिकारियों व कर्मचारियों ने गंगा सेवकों की 200 सदस्यों की टीम के साथ भागेदारी की।

कैरवान गांव से आरम्भ हुए पौधारोपण में माननीय मुख्यमंत्री के साथ एनएमसीजी के महानिदेशक राजीव रंजन मिश्रा, कार्यकारी निदेशक परियोजना हितेश कुमार मकवाना, निदेशक डॉ. प्रवीन कुमार और राज्य परियोजना प्रबंधन गुप के

कार्यक्रम निदेशक डॉ. राघव लंगर ने प्रतिभाग किया। इस अभियान में पौधा रोपण में स्कूली बच्चों ने भी बढ़ चढ़ कर हिस्सा लिया। नमामि गंगे को कैरवान गांव में प्लांट संख्या 44, 45 दिया गया था, जहां 200 से ज्यादा गंगा सेवकों ने पौधा रोपण किया।

कैरवान गांव के बाद पूरी टीम माननीय मुख्यमंत्री के साथ मोथरोवाला, सपेरा बस्ती और एसटीपी पर भी पहुंची जहां उन्होंने पौधा रोपण किया। नमामि गंगे की टीम ने रिस्पना नदी के किनारे कई स्थानों पर पौधा रोपण अभियान में भागीदारी की। नमामि गंगे टीम ने इस अभियान को रिस्पना नदी को पुनर्जीवित किये जाने का शुभारम्भ बताया।



गत 22 जुलाई 2018 को देहरादून के समीप कैरवान गांव एवं मोथरोवाला, सपेरा बस्ती में माननीय मुख्यमंत्री, उत्तराखण्ड, श्री त्रिवेन्द्र सिंह रावत एवं महानिदेशक, राष्ट्रीय स्वच्छ गंगा मिशन, श्री रजीव रंजन मिश्रा वृक्षारोपण कार्यक्रमों में भाग लेते हुए। साथ में दिखाई दे रहे हैं मुख्यसचिव उत्तराखण्ड, श्री उत्पल कुमार, कार्यकारी निदेशक (परियोजना) रा.स्व.गं.मि., श्री हितेश कुमार मकवाना एवं प्रोग्राम निदेशक, राज्य परियोजना प्रबंधन समूह, उत्तराखण्ड, श्री राघव लंगर।

## From Chief Editor's desk...



Dear Patrons,

It was more than a year back that we endeavored to bring out a News letter titled 'Namami Gange Patrika' carrying out updates and reports on the projects and intervention being taken up for rejuvenation of river Ganga. To begin with, we thought of publishing a

quarterly news letter but as months rolled by, the projects and activities gained such a momentum that we had to switch over to even bi-monthly editions to keep pace with the growing interventions with a view to keeping our stakeholders informed of the varied initiatives. The humble effort has now gained strength and we have issued six editions so far which have been well received by our stakeholders and the people in the Ganga basin at large.

National Mission for Clean Ganga, in its avatar of an Empowered Authority constituted under the Environment protection Act 1985 recently completed two years, which have been epochal in every sense of the word. The Mission Clean and Rejuvenate Ganga is on an irreversible track and now galloping at good speed taking together the old stakeholders and joining hands with new entities and organizations to bring in newer approaches and initiatives for all round development and restoration of this holy river.

It is heartening to note that the perception amongst the people is changing – fast and for the good. The nay-sayers, who had no trust in the ability of the system to deliver, is giving way to believers who are joining hands, minds and even hearts to clean and conserve the mighty river and its tributaries. We at NMCG have given a clarion call to one and all for stepping in with the mission clean Ganga and are now pleasantly surprised that more and more people, entities, organizations are coming forward to support with the request – 'How can we contribute in this mission'. We have also launched a drive to reach out to every nook and corner through press, media, social media platforms, seminars, interactive sessions etc. to put across the efforts being made by the Mission and also gently exhorting the populace to keep the river clean, healthy and pure for the benefit of existing and future generations. The response has been overwhelming and gives us that much more strength and vigor to accelerate the efforts of Ganga purification. 'Swachh Ganga mission' is gaining greater acceptability each day amongst large sections of the population.

It is also a matter of great pride for all of us in the Mission to see the growing awareness for protecting the

environment and particularly for saving trees. Large sections of the population is increasingly becoming conscious of the challenges to the environment and are supporting governmental and community driven interventions to save trees, water bodies and ultimately the mother earth. 'Namami Gange' part from cleaning and purifying river waters is also aggressively carrying out large-scale afforestation activities on the banks of river Ganga with the objective to make the river and the environment around green and clean as also to recharge ground aquifers and prevent soil erosion from the banks. Our efforts are now bearing fruits as almost a crore of plants have been put along the 5 kilometer belt of river Ganga in five riparian states. This drive has been conducted by the respective State Forest Departments based on a very scientific and comprehensive Detailed Project Report (DPR) prepared by the Forest Research Institute of India. Apart from the forestry officials, NMCG has been able to engage the communities living in forests and those along the river Ganga successfully to plant more and more trees in their surroundings and help us greening the Ganga and the environment. The green Ganga campaign has really taken off in a big way as the Honorable Chief Ministers of States like Uttarakhand and Uttar Pradesh have personally launched plantation drives in their respective states involving various departments and communities in making this green initiative a success. The State Governments have launched special afforestation drives like 'Ganga Haritima Abhiyan' in Uttar Pradesh, 'Ganga Harela Abhiyan' in Uttarakhand and 'Har Parisar, Hara Parisar' in Bihar, which is drawing huge response from one and all.

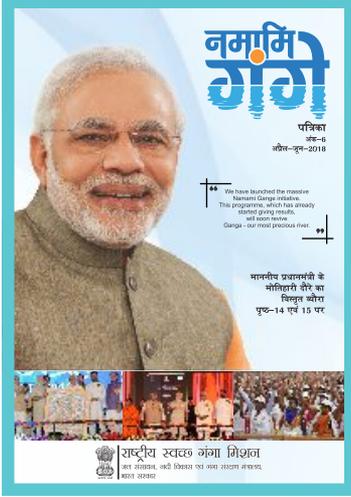
Keeping in line with this green Ganga campaign, we present before you the seventh edition of the newsletter, though slightly late, sharing vignettes from the afforestation efforts being carried out by the Clean Ganga mission at different levels and by various stakeholders. We also are keeping you updated on the other important projects and interventions, which have been recently taken up for Ganga rejuvenation and management apart from the growing presence of the Mission in various forums and seminars. We in the Mission are committed to making Ganga 'Aviral' and 'Nirmal' and for providing 'Swachh Kinara' to millions of believers who throng her banks daily. And we shall also make the river 'Green'.

Do write to us on this issue and also join in by giving your suggestions for cleaning the river Ganga.

Jai hind.

Rajiv Ranjan Mishra, DG,  
National Mission for Clean Ganga

## Feedback on Namami Gange Patrika April to June 2018



नमामि गंगे की परियोजनाओं की जानकारी एवं गंगा संरक्षण के प्रति लोगों को जागरूक किये जाने दृष्टिगत प्रकाशित होने वाली यह त्रैमासिक पत्रिका काफी उपयोगी प्रतीत होती है। मैं धार्मिक गंगा के संरक्षण के लिए किये जा रहे नमामि गंगे टीम के इस प्रयास की सहारना करती हूँ।

—पूजा लटवाल, उत्तराखण्ड



यह पत्रिका नमामि गंगे की परियोजनाओं को प्रभावी रूप से दर्शित करती है। मैं नमामि गंगे टीम द्वारा आमजनमानस को गंगा की स्वच्छता एवं संरक्षण प्रति जागरूक किये जाने के इस प्रयास की सहारना करता हूँ।

—देव मेहता, पत्रकार



नमामि गंगे की प्रकाशित पत्रिकाओं के माध्यम से देश भर में हो रहे जनजागरूकता के कार्यक्रम के विषय में जानकारी प्राप्त होने के साथ-साथ परियोजनाओं की महत्वकांक्षा की स्पष्टता भी नजर आती है, जो एक उत्तम कार्य है।

— प्रदीप रावत समाजिक कार्यकर्ता



नमामि गंगे कि जो पत्रिकाएं प्रकाशित हो रही है उनसे नमामि गंगे परियोजना के विषय में हमें जानकारी आसानी से प्राप्त हो जा रही है, जो कि एक सहारनीय कदम है।

— दिनेश बिश्ट, कर्मचारी स्वजल परियोजना, देहरादून।

### Topic

### PageNo.

Inauguration of Ghats by Hon'ble Minister at Kanpur and Bithur.....	5
New Initiatives for Rejuvenation of River Ganga.....	6
National Mission for Clean Ganga-Growing Imprints.....	7-8
Forestry Interventions and Ganga Rejuvenation.....	9
Greening Ganga-Afforestation along the Ganga basin.....	10-11
Forestry Interventions for Ganga in Uttarakhand.....	12-13
Forestry Interventions for Ganga in Uttar Pradesh.....	14
Forestry Interventions for Ganga in Bihar.....	15
Forestry Interventions for Ganga in Jharkhand.....	16
Forestry Interventions for Ganga in West Bengal.....	17
Initiatives on Agricultural Farming and Medicinal Plantation..	18
Geotagging: A Tool for Monitoring and Planning.....	19
गंगा वृक्षारोपण अभियान-2018.....	20-21
Experiments on reducing Pollution Load.....	22
Ganga Rejuvenation – Global Outreach.....	23
Namami Gange in news.....	24-25
District Ganga Committee-Partners in Ganga Rejuvenation..	26
A Life Less Ordinary: Ganga Prahari.....	27
Ganga Task Force in the Service of River Ganga.....	28-29
गंगा के किले:-ऊँचागाँव किला.....	30
स्वच्छता समाचार दूरदर्शन पर नमामि गंगे.....	31
गंगा विचार मंच.....	32
राज्यों से रिपोर्ट-उत्तराखण्ड.....	33-34
राज्यों से रिपोर्ट-बिहार.....	35
लेख: एक पेड़ की पुकार.....	36-37
गंगा पर कुछ विचार, कुछ संकल्प.....	38
Call for Planting Trees.....	39
Our Partners.....	40

### Editorial Board

#### EDITOR IN CHIEF

Mr. Rajiv Ranjan Mishra  
Director General

#### COORDINATION & COMPILATION

Mr. Rozy Agarwal  
Executive Director (Finance) & Senior Editor  
Mr. Sandeep Behera  
Consultant Bio-Diversity  
Mrs. Kritika

Project Officer (Technical)

Mr. Neeraj Bhagat Gahlawat,

Project Officer (Technical)

Mr. Peeyush Gupta, ARTIS

#### CREATIVE ASSISTANCE

Mr. Suraj, Mr. Kundan & Mr. Aditya, Social Media Team

#### CREATIVES & DESIGN BY

Mr. Sunil Kumar Yadav

Union Minister for Water Resources, River Development & Ganga Rejuvenation, Shri Nitin Gadkari inaugurated 20 newly constructed/restored Ghats on river Ganga in Kanpur and Bithur on 13th August, 2018. The Hon'ble Minister also announced projects to tackle pollution from two of Kanpur's biggest pollution hotspots: Jajmau- a source of industrial effluents and Sisamau – source of domestic sewage. Shri Gadkari announced that a 20 MLD Common Effluent Treatment Plant (CETP) has been approved for Jajmau at an estimated cost of ₹554 crore (phase-I) for the treatment of effluent from tanneries. In addition, he also announced that the complete tapping of Sisamau Nala would be done by end of this year. Out of 140 MLD of sewage from Sismau Nala, which was falling untreated into Ganga earlier, 80 MLD of sewage has

already been diverted to Bingawan STP and the remaining diversion will be completed soon.

Speaking at a ceremony at Chandrasekhar Azad University in Kanpur, Shri Gadkari said that the Ministry of Water Resources, River Development & Ganga Rejuvenation is fully committed to cleaning Ganga and its tributary rivers, and there is no shortage of funds for this purpose. Stressing upon the need to create wealth from waste he said that methane from the sewage in Kanpur can be used for generating Bio-CNG, which can in turn be used for running the city transport. Yogi Adityanath, Hon'ble CM, Uttar Pradesh, Dr. Satya Pal Singh, Hon'ble MoS, MoWR, RD & GR, Dr. Murli Manohar Joshi, Hon'ble MP, Kanpur and other dignitaries were also present on the occasion.



**Shri Nitin Gadkari, Hon'ble Minister MoWR RD&GR along with Yogi Adityanath, Hon'ble Chief Minister, UP, Dr. Satyapal Singh, Hon'ble MoS MoWR RD&GR, Hon'ble MP, Kanpur, Dr. Murali Manohar Joshi and Shri Suresh kumar Khanna, Hon'ble Minister UP Govt., and other eminent dignitaries inaugurating Ghats in Kanpur and Bithur and inspecting the development work at Ganga Ghats.**

**Newly constructed/renovated Ghats at Kanpur & Bithur**

The 20 Ghats that were inaugurated on 13th August include Gola Ghat, Sarsaiya Ghat, Bhairav Ghat, Guptar Ghat, Koyala Ghat, Makjain Ghat, Sidhnath Ghat, Maskan Ghat, Parmat Ghat, Bhairav Ghat, Chappar Ghat, Mahila & Tulsi Ram Ghat, Pandav

Ghat, Pathar Ghat, Punchlameshwar Ghat, Sita Ghat, Bharat Ghat, Kaushalya Ghat and Tuta Ghat. Development of 4 Ghats and 3 crematoria are under progress and these will be inaugurated soon.



**Shri Nitin Gadkari, Hon'ble Minister MoWR RD&GR, chairing a review meeting of ongoing projects under 'Namami Gange' in the state of Uttar Pradesh on 13th August, 2018 in the presence of Hon'ble Chief Minister, Uttar Pradesh, Hon'ble MoS MoWR, Secretary MoWR, DG NMCG and senior management of the state Govt. of UP.**

**Shri Nitin Gadkari Hon'ble, Minister MoWR RD&GR, briefing the national media on the progress of 'Namami Gange' Projects in Kanpur on 13.8.2018 in the presence of Yogi Adityanath, Hon'ble CM, UP, Dr. Satyapal Singh, Hon'ble MoS MoWR RD&GR & Dr. Murli Manohar Joshi, Hon'ble MP Kanpur.**

The National Mission for Clean Ganga continues to take up various projects and interventions for wholesome cleaning, rejuvenation and conservation of river Ganga and the areas alongside the banks of the river and its tributaries. The Empowered Executive Committee of NMCG is meeting every month to sanction new projects of varied nature for holistic management of the river Ganga. In the quarter from July-

September 2018, the Executive Committee held two meetings on 24<sup>th</sup> July 2018 & 28<sup>th</sup> August 2018 wherein a number of projects were sanctioned/approved ranging from projects of Interception and Diversion (I&D) and creation of STPs, development of ghats and crematoria, treatments of drains and cultural mapping of the entire Ganga basin.



Shri Rajiv Ranjan Mishra, DG, NMCG chairing the 14th and 15th Executive Committee meeting along with Senior Management of National Mission for Clean Ganga and state government authorities

### Major projects sanctioned in the quarter July-September 2018

Project Description	Estimated Cost (in crores)
I&D works for Sonapur town, Bihar	30.93
Development works of ghats and crematoria at Mirzapur, U.P.	27.41
I&D works for Rispana river and Bindal river in Dehradun, Uttarakhand	60.00
Treatment of drains in Allahabad and upstream and in Farrukhabad-Fatehgarh, Shuklaganj, U.P.	9.71
Documentation of 'Cultural Heritage along river Ganga from Gaumukh to Ganga Sagar'	3.20
Rehabilitation/development of ghats and crematoria at Chhapra and Sultanganj, Bihar	43.71
Upgradation and rehabilitation of crematoria in Kankhal, Uttarakhand	1.81
Development of Ghats and Crematoria at Sonapur, Bihar	22.92

### New Projects at a Glance

**NAMAMI GANGE**

Proposal approved to document Cultural Heritage along River Ganga from Gaumukh to Gangasagar

**NAMAMI GANGE**

15<sup>th</sup> Executive Committee Meeting

**SEWERAGE INFRASTRUCTURE**

Project approved for I&D works for Rispana & Bindal River in Dehradun, Uttarakhand at an estimated cost of Rs. 60 Cr.

Once completed, untreated wastewater from 117 drains will not enter river Ganga

#CleanGangaInUttarakhand

**NAMAMI GANGE**

15<sup>th</sup> Executive Committee Meeting

**RIVER FRONT DEVELOPMENT**

PROJECT APPROVED FOR SONAPUR, BIHAR

**TOTAL ESTIMATED COST Rs.22.92 Cr.**

THIS PROJECT INCLUDES

- Construction of a connecting promenade
- Embankment protection
- provision for public amenities as well as landscaping along the ghats

#CleanGangaInBihar

**NAMAMI GANGE**

15<sup>th</sup> Executive Committee Meeting

**SEWERAGE INFRASTRUCTURE**

PROJECT APPROVED FOR SONAPUR, BIHAR

**TOTAL ESTIMATED COST Rs. 30.92 Cr.**

THIS PROJECT INCLUDES

- 3.5 MLD (Million Litre Per day) capacity Sewage Treatment Plant
- Interception and diversion (I&D)
- Operations and Maintenance (O&M) for 15 years

#CleanGangaInBihar



Shri. Nitin Gadkari, Hon'ble Minister Water Resources, River Development and Ganga Rejuvenation reviewing the progress of projects in the states of Uttarakhand, Bihar, Jharkhand and West Bengal along with the team of NMCG and concerned officers of the respective State Governments.



The 6th edition of Namami Gange patrika was released by Shri Nitin Gadkari, Hon'ble Minister of WR, RD&GR, on 28th July, 2018 in the presence of Dr. Satyapal Singh, Hon'ble MoS, Shri U.P. Singh, Secretary MoWR and Shri Rajiv Ranjan Mishra, DG, NMCG.

Shri. Nitin Gadkari, Hon'ble Minister Water Resources, River Development and Ganga Rejuvenation chairing a meeting to review the progress of CSR engagement of NMCG with various corporate groups on 31st July, 2018.



Shri. Nitin Gadkari, Hon'ble Minister Water Resources, River Development and Ganga Rejuvenation addressing the corporate groups at Mumbai on 30th August 2018 organized by Indian Merchant Chamber (IMC) Mumbai. A cheque of ₹25 lakhs was handed over to the Hon'ble Minister by IMC as contribution towards Clean Ganga Fund.



Shri. Rajiv Ranjan Mishra, Director General, NMCG chairing a meeting at Wildlife Institute of India (WII) on 28th August, 2018 as part of steering committee meeting of the 'Biodiversity conservation project' being implemented by the WII. The team WII with DG, NMCG after the steering committee meeting.



Shri. Rajiv Ranjan Mishra, Director General, NMCG interacting with Indian Forest Service officers at Paryavaran Bhawan, New Delhi on 31st July, 2018 to give them a perspective on afforestation drive under 'Namami Gange' program.



Shri. Rajiv Ranjan Mishra, Director General, NMCG and Shri. Hitesh Kumar S. Makwana, Executive Director (Projects) engaging with municipal authorities at Lucknow on 27th July, 2018 on 'Waste Water Management in Transforming Urban Landscape' on the occasion of 3rd Anniversary of AMRUT.



Shri. Rajiv Ranjan Mishra, Director General, NMCG speaking at Baikal International Water forum Irkutsk, Russia and apprised the international audience on latest innovation and interventions being adopted for rejuvenation of river Ganga.



Shri. Rozy Agarwal, Executive Director (Finance), Shri. Sandeep Behera, Consultant (Biodiversity), Dr. Hema Patel, Project Officer (Technical) and Ms. Sanjam Cheema, Sr. Consultant Communication and Public Outreach from NMCG attending WII seminar on 'Biodiversity conservation and outreach program' on 17th & 18th September, 2018.



NMCG exhibition on Municipalika event in Mumbai from 19th-21st September, 2018, where NMCG showcased various initiatives taken up for urban waste management along Ganga. The NMCG pavilion was given an award for best stall on 'Innovation in integrated waste water management'.



Shri Rajiv Kishore, Executive Director(Administration) NMCG along with interns from scientific background who made presentations on Ganga specific subjects on completion of the internship at NMCG on 17th July, 2018.





Since time immemorial, the importance of forests to humanity has been well recognized and documented. Forests provide multiple goods and services and are seen as sources of timber, edible products, fuelwood, medicinal plants and habitat to wildlife. These predominantly impact the retention of water as well as rates of soil formation or erosion as these absorb rainfall and snow melt and also slow runoff, reduce soil erosion, improve water infiltration rates and recharge aquifers. Thus, they have 'sponge effect' for retaining water and filtering the pollutants. Forests are storehouses of biodiversity and play an important role in global cycling of carbon, oxygen and other gases influencing the earth's atmosphere and in turn the climate fluctuations. Amongst diverse forests, mountain forests in upstream areas and higher reaches, riverine forests all along river courses, and mangrove forests in estuaries and river deltas play important role in protecting the landscape against natural hazards, viz., avalanches, floods, cyclonic storms, and tsunami. Forested basins and catchments supply a high proportion of freshwater for domestic, agricultural, industrial and ecological needs in both upstream and downstream areas (Calder et al., 2007). Thus, there is an urgent need for developing better understanding between forests, water and hydrology particularly for freshwater benefits to downstream areas, for which sound management of upland and riparian forests is imperative.

The river Ganga is a trans-boundary river of Asia which flows through the nations of India and Bangladesh and the largest river in India. The Ganga is the most sacred river for Hindus. It is also a lifeline for millions of Indians who live along its course and depend on it for their daily needs. The river has been the source of physical and spiritual sustenance of Indian civilization for millennia and has significant geographical, ecological, environmental, religious, cultural, spiritual and economic significance in India with values transcending the boundaries of the basin. In spite of the religious and cultural pre-eminence of Ganga river in the Indian ethos since times immemorial, testifying to its centrality to Indian civilization and conservation significance, fragmentation of the Ganga river by barriers, diversion of water, reduced water flow, extreme pollution pressure, excessive use of water and enhanced floods continued down the ages and the river remained neglected for a long time.

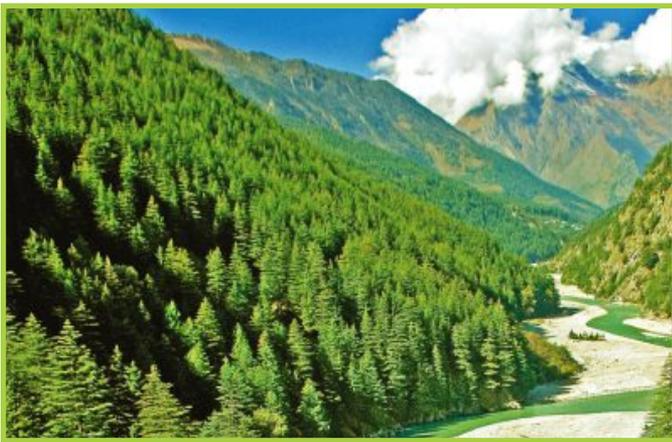
The availability and quality of water in the Ganga have been increasingly threatened by over use, misuse and pollution, and both are strongly influenced by the extent and condition of forests in the upstream and downstream areas. More so, climate change is also likely to alter the role of forests in regulating the water flows and influencing the availability of water resources (Bergkamp et al., 2003; Calder et al., 2007). These strong linkages between forests and water urgently seek high priority attention. This envisaged major activities for Ganga rejuvenation are 'forestry interventions' so as to enhance the productivity and diversity of the forests in headwater areas and all along the river and its tributaries.

Recognizing the diversity, complexity, and intricacies of forest ecosystems and pivotal multiple functions performed by them and their inter-connectedness with highly dynamic river ecosystems, the Ministry of Water Resources (MoWR, RD & GR) and the Namami Gange program of NMCG decided to adopt a holistic approach of river basin management, particularly Ganga rejuvenation. This holistic approach also emphasizes appropriate forestry interventions by way of protection, habitat management, afforestation, catchment treatment - soil and moisture conservation works, ecological restoration of vital riparian forest buffer, bioremediation, improved livelihood of forest dependent communities and forest dwellers, alternate income generation activities through regulated tourism and awareness. It is envisaged that such concerted efforts and initiatives of forestry interventions for Ganga will greatly facilitate the major goals of accomplishing Nirmal Dhara and Aviral Dhara. The forest departments of the five stakeholder states (Uttarakhand, UP, Bihar, Jharkhand & West Bengal) through which Ganga flows, have been carrying out plantations proposed and other activities all along the Ganga River since 2017 as per the plan proposed in Detailed Project Report (DPR) for Forestry Interventions in River Ganga developed by Forest Research Institute, Dehradun. The forestry interventions are taken up in 'Ganga riverscape' which includes the entire catchment of Bhagirathi, Alaknanda and Ganga sub-basins in the state of Uttarakhand and a 5 km buffer around either side of bank lines of Ganga stem from Haridwar to Ganga Sagar including the delta. In addition, the riverscape also included a 2 km buffer on either side of different tributaries of the river Ganga except the river Yamuna and its tributaries. The potential plantation and treatment models of forestry and other conservation interventions in major three type of landscape components viz. (i) Natural, (ii) Agriculture, and (iii) Urban Landscapes are being implemented under the forestry intervention program. Extensive plantations in various landscapes by five participating states along river course besides varied conservation interventions viz. soil and water conservation, bioremediation and bio-filtration, riparian wildlife management and wetland management and supporting activities like policy and law interventions, concurrent research, monitoring, evaluation and awareness are in progress. These interventions will increase green cover, augment the water flow, beautify river basin, enhance biodiversity & bio-filters in River Ganga, and also educate masses about the significance of keeping the river clean.



**R**iver Ganga, which forms one of the largest basins of the world and represents around 26% of the India's land mass is home to many threatened and sensitive ecosystems, forests, grasslands, swamps and mangroves along with a large variety of endangered faunal species that inhabit this mighty river.

Isolationist approach to river conservation and management constrains wholesome rejuvenation of the river ecosystem. This approach in recent times has given way to a 'riverscape' perspective, which integrates hydrological, geomorphological and biological researches for better understanding and management of dynamic river systems. The 'riverscape' approach integrates rivers with their surrounding environments, landscapes and ecosphere. Sustenance, maintenance and regeneration of Forests on a scientific basis are sine-qua-non for river conservation and rejuvenation and for overall ecological integrity of the river systems.



'Namami Gange', the all-inclusive and integrated river conservation mission brought about a paradigm shift to River Ganga rejuvenation by bringing in multi-sectoral, multi-dimensional and multi-stakeholder approach going beyond limited interventions of the past of liquid waste management only. It is widely accepted that the availability and quality of river waters are influenced by the location and condition of forests both in the upstream and downstream areas of the river. Hence, keeping in view the strong linkages between the forests and river waters, one of the key activities envisaged under the 'Namami Gange' program for Ganga rejuvenation is 'Forestry intervention' aimed to enhance the productivity and diversity of the forests in headwater areas and along the course of the Ganga river and its tributaries. Bio-diversity conservation including Afforestation – Conservation of Flora along with conservation of aquatic life and wetlands with a budgetary allocation of Rs. 150 crores has been defined as a one of the major initiatives under the 'Namami Gange' program to be implemented by the National Mission for Clean Ganga (NMCG) as part of holistic rejuvenation of River Ganga under river basin management concept. This holistic approach emphasizes appropriate interventions by way of afforestation, habitat management, catchment treatment-soil and moisture conservation, restoration of vital riparian forest buffer, improved livelihood of forest dependent communities and forest dwellers and providing alternate income generating activities.

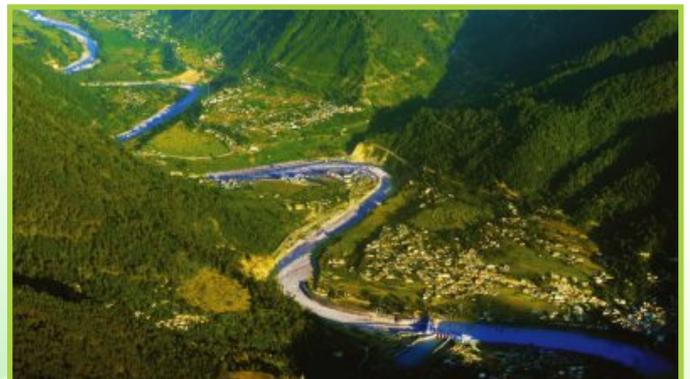
The Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD & GR) and NMCG commissioned a Detailed Project Report (DPR) on forestry interventions through the Forest Research Institute (FRI) Dehradun, which is the premier seat of learning and internationally renowned Knowledge management centre in the field of forestry and environmental research under the Ministry of Environment, Forest and Climate Change, GOI. The DPR was prepared during a period of 12 months spread from April 2015 to March 2016. The FRI adopted a consultative approach holding discussions at various levels, collecting and collating multiple data sets and formats, and studied different models during the course of preparation of the project report. The DPR envisages the key role of State Forest Departments who are the custodian of forest and wildlife of the respective states, Armed Police forces and the civil society in implementing the forestry interventions.

Key Components of Forestry intervention under Namami Gange are afforestation activities in natural, agricultural and urban landscapes by way of plantations in the five states of Ganga riverscape including soil and water conservation, riparian wild life and wetland management. The project duration is initially for a period of five years starting from the year 2016-17, the first year of implementation and upto the year 2021-22, the last and the fifth year as per the scheme.

National Mission for Clean Ganga, the implementing arm of 'Namami Gange' program has embarked on a major afforestation drive within 5 kms on each side of the River Ganga in the five riparian states in association with the State Forest Department and enlisting the support of the other Central and State government departments, non-governmental and volunteer organizations, Armed police forces and the civil society in greening the river Ganga basin.

The forestry interventions are being taken up in a concerted manner in the five Ganga main-stem states of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal. These interventions started in the year 2016-17 with drawing up of Annual Plan of Operations (APO) by the respective State Forest Departments. The afforestation operations are now into the third year, and a total of Rs. 132.61 crores have been utilized till date.

The major impact of the forestry interventions will be seen in increased recharge of the aquifers, reduced erosion and improvement in the health of river ecosystem.



(with inputs from FRI DPR)

## Greening Ganga – Afforestation along the Ganga basin by State Forest Departments

The subject of forest, wildlife and environment figures in the Concurrent list of the Constitution of India. The State Forest Departments (SFD) are responsible for the management, conservation and protection of the environment, the forest and the wildlife of the area. No afforestation activity can be successful without their assistance, cooperation and coordination. The inter-disciplinary nature of the mandate makes the SFDs the focal

point of inter departmental convergence in flora and fauna management. The NMCG has harnessed this strength of the SFDs to green the river Ganga and for effectively carrying out plantation on both the sides of the course of the river. The interventions have started in the right earnest and the respective states are in to the thick of creating a green belt along Ganga, which is going to have a salutary effect on the health of its waters in the years to come.

### Work plan of plantation activities

Plantation Activities are spread over a period of 5 to 7 years to make an impact. The drive involves various steps at different stages including preparatory works. Broadly speaking, the three major steps involved are advanced soil works, planting of suitable plant species in the developed areas and maintenance of the area till the plants get established.

#### The steps involved in the plantation drive–

**First year...** Advance Soil Work year and the activities which are carried out are–

- i. **Survey and Demarcation-** To demarcate the area for further actions.
- ii. **Site clearance-** Includes cutting/burning of the bushes and unwanted shrubs and clearing the site for soil works.
- iii. **Fencing-** Includes protecting the site against grazing and human disturbances either by fencing the area, by erecting barbed wire or by digging of protection trench all along the periphery of the area.
- iv. **Advance soil Work-** Alignment and digging of pits or contour trenches, Soil & Moisture Conservation Structures like gully plugs, Wire Check Dams etc.

All these activities are completed at least 3 to 4 months before the planting i.e. before the on set of Monsoon i.e. latest by March every year.

**Second Year.....** also called Planting Year and activities included are–

- i. **Filling of Pits and Dressing of Contour trenches-** The soil dug up and weathered during advanced soil work phase is again filled or dressed in the pits/trenches during Month of June or before on set of Monsoon.

Sowing of different seeds of grasses or plants is also done during this time. Transportation of planting material like Plants, grasses Shrubs to the site, done before the onset of Monsoon so that planting could be started as soon as the first shower starts.

- ii. **Planting-** With the on set of Monsoon, actual planting of saplings, in pits and tufts of grasses in contour trenches, is started. The planting is to be completed latest by end of July so that the plants so planted could make full use of the whole Monsoon season.

- iii. **Weeding and winter hoeing–** Done after 15 to 20 days of planting and another during winter with some use of Bio fertilizer.

- v. **Watch and Ward–** Through out the year to ensure protection against grazing, human disturbance and fire.

Maintenance for 3 to 5 years includes 10% to 15% beating up i.e. the replacement of damaged plants respectively during 3rd and 4th year. Maintenance part also includes weeding hoeing and watch and ward of the plantation sites.

### Plantation activities at a Glance from 2016-17 to 2018-19

State	Total plantation done (in number)	Total funds sanctioned (Rs. in crores)	Funds utilized (Rs. in crores)
Uttarakhand	3678227	63.9907	50.73
Uttar Pradesh	2861879	40.5135	19.33
Bihar	499138	45.6182	35.59
Jharkhand	735187	20.1266	14.83
West Bengal	1677981	29.7333	12.13
<b>Total</b>	<b>94,52,412</b>	<b>199.60</b>	<b>132.61</b>

### Major Green interventions under Forestry Program

- Soil and moisture conservation works.
- Preparation of trenches/pits .
- Developing saplings and plants in nurseries.
- Plantation activities in identified areas – medicinal and other plants.
- Distribution of plants amongst farmers, villagers and forest dwellers.
- Public outreach activities including tree planting campaigns.
- Developing Eco parks along Ganga banks.



**F**orest Department of Uttarakhand is executing Forestry Intervention activities in various catchments of river Ganga and its 11 tributaries by planting trees and protecting natural ecosystem in the area.

Under the project 'Namami Gange' in Uttarakhand, land along banks of Ganga is being afforested for increased recharge of the aquifers, reduced erosion, and improved health of river ecosystem. This program started in 2016 and will continue for a period of 5 years till 2021. Forest Department of Uttarakhand is carrying out plantation activities as well other intervention in



natural, agricultural and urban landscapes.

In the years from 2016-18, Forest Department of Uttarakhand prepared 28 lakh saplings for plantation in subsequent years. In the year 2016-17 and 17-18, a total of 2320 hectare area was marked for plantation where 14.68 lakh plants were planted by forest department of Uttarakhand. Further, in the year of 2018-19, 22.60 lakh plants are being planted in 2425 hectare area in Natural and Agriculture Landscape.

For public awareness and cleaning of river banks, Forest Department of Uttarakhand is also developing Ganga Vatika & Eco Parks in Haridwar, Rishikesh, Uttarkashi, and Dehradun. with total area of 10.75ha. The concept is to bring forth aesthetics and awareness about conservation of natural ecosystem on the banks of river Ganga. The natural layout of the land is maneuvered in such a way that the aesthetic beauty will be enhanced without much investment.

Forest Department of Uttarakhand is also working on soil and moisture conservation activities in the catchment area of Ganga



and its tributaries. This includes various activities like rain water harvesting using check dams, contour trenches, crate wire check-dams etc.

During the first two years i.e. 2016-17 & 2017-18, Forest department of Uttarakhand carried out Soil & Moisture conservation activities in 373ha. and in the year 2018-19 Soil & Moisture conservation work is being carried out in 250ha.

Under the agriculture landscape plantation activity, Forest Department of Uttarakhand has a provision of distribution of



fruit plants to farmers and villagers for planting in their private land / Gram Panchayat/ Van Panchayat/ Panchayati Land.

In the year of 2016-17 & 2017-18, total 136,827 plants were distributed among 3528 beneficiaries. Following this, in the year 2018-19 total of 15000 plants are being distributed to the beneficiaries. Under the Urban Landscape Plantation activity, those works are included which are to be executed in City/Municipal area like; Bio remediation and Bio Filtration, River Front development, Eco park Development, Institutional and Industrial Estate plantation and Avenue Plantation etc. Under this activity in the year of 2016-17 & 2017-18, total 11250 plants were planted in the various selected locations along the highways and in Ganga Vatika.

To promote and achieve the success on ground level for the protection of Ganga and its tributaries, department is also organizing various public events such as Ganga Vriksharopan Saptah. In 2017, 26,612 plants were planted in 114 locations of project area, with the participation of students/villagers and NGOs. Similarly, in 2018-19, from 9th July 2018 to 15th July

2018 during Ganga Vriksharohan Saptah, Forest Department Uttarakhand organized public events and campaign for plantation activity on 35 locations where 15,639 plants were planted by 4593 participants.



In addition to this, various forest divisions also carried out tree plantation activities in 132 Gram Panchayats of Ganga Bank Villages



and planted 1,02,123 plants during monsoon season of 2018-19.

Forest Department of Uttarakhand is continuously organizing public events and campaign with cooperation of NMCG, where they are sharing information with youth, school children and rural population regarding the need, importance and method of keeping Ganga clean through various activities under 'Namami Gange' Program.

## Ganga Vatikas



The river Ganga enters in the state of Uttar Pradesh in district Bijnore and flows through a length of 1,140 Kms. and leaves the state in Balia district. 27 districts are situated on the bank of river Ganga. The total basin area of Ganga in Uttar Pradesh is 2,94,364 Sq.Kms.

Urban and Natural Landscape Plantation have been taken up extensively under Forestry Interventions for Ganga in last two years which continue in the present year. Urban Landscape Plantation has been taken up in the districts of Varanasi, Allahabad, Kanpur and Chandauli. 31,951 plants have been planted in brick guards and iron guards on different roads, pathways and institutional areas in the urban localities of these districts. Various indigenous and ornamental species like Amla, Arjun, Bel, Peepal, Guava, Jamun, Kadamb, Mango, Neem, Semal, Sheesham and Siris have been planted in Urban



Plantations

Landscape Plantation. Three Eco Park namely Minto Park and Ramkatha Park in Allahabad and Sarnath Park in Varanasi have been developed under urban landscape. Eco Park development includes activities like ornamental plantation, Children's Park, Jogging Track, Interpretation Centre, drinking water facility, irrigation, electricity, public utilities, water body, signboards and boundary-walls etc.

Natural Landscape Plantation in non urban areas has been taken up in the districts of Allahabad, Bulandshahar, Bijnore, Farrukhabad, Fatehpur, Kannauj, Kanpur Nagar, Chandauli, Mirzapur, Meerut, Muaffarnagar, Sambhal and Unnao and a total number of 5,07,625 plants have been planted.

“Ganga Vriksha-Ropan Saptah” was organized through large scale people's participation in July 2017 (25.07.2017 to



Community Plantations



Ganga Haritima Abhiyan

31.07.2017). Total number of 14,72,931 plants were planted during this Special Plantation drive in 27 Ganga districts of Uttar Pradesh. Similar plantation drive was organized in July 2018 as “Ganga Vriksha-Ropan Abhiyan” from 09.07.2018 to 15.07.2018 in the 27 districts of river Ganga, Uttar Pradesh. Total number of 9,63,747 plants were planted during this Special Plantation Drive.

Special Plantation Plan to saturate ten pilot project of Ganga Gram of Uttar Pradesh in the districts of Allahabad, Bulandshahar, Varanasi and Hapur have been prepared which includes activities like Home Herbal Garden, School Herbal Garden, Path Plantation, Agriculture Landscape Plantation, establishment of Navgraha Vatika, Panchwati, Harishankari. Total number of 42,274 plants are being planted in these 10 pilot Ganga Grams.

To ensure continuous and clear flow of Ganga, improve its ecosystem and improve quality of life of people living on the banks



Tree Protections Works

of Ganga through integrated development of their villages, a massive people's participation programme “Greening the Ganga Campaign” was launched this year in Uttar Pradesh. This campaign provides common platform for all persons/agencies/organizations to contribute in campaign. Hon'ble Chief Minister of Uttar Pradesh launched “Ganga Haritima Abhiyan” in Allahabad. Ganga Seva was started for this campaign. ‘Ek Vyakti - Ek Vriksha’ Yojana was started to encourage individuals to plant on private land.

Advance Soil Work and Nursery preparation are also under way in Uttar Pradesh targeting for planting 25 Lakh saplings in year 2019-20 under Namami Gange.

**C**leaning and maintaining the continuous flow of Ganga has been a mega effort undertaken by the Government of India under Namami Gange project. Role of forestry in this endeavour was amply realized and decided to plant trees and other herb/shrub along the Ganga. In year 2015, for the first time in Bihar State, a meeting was organized with various stakeholders and subject matter experts. In this scheme, 5 km stretch on either side of Ganga and 2 Km in its auxiliary rivers Kosi, Gandak, Ghaghra and Son is included where plantation is to be done under the project.

In the State of Bihar, in year 2015, a meeting of the Executive Committee of the Hariyali Mission Society was organised in which forestry intervention for Ganga project was agreed to be executed by the Hariyali Mission. In the year 2016, the Forestry intervention for Ganga was launched in the state. Plantation work has been carried out at 31 places of 5 forest divisions in which 39,908 plants were planted in the state. Continuous monitoring is being done by the forest officials.

The work of development of various blocks, such as block, bamboo and iron gabion, river and canal side, riparian wildlife management, wetland management, soil and moisture conservation/preservation and development of Eco Park are proposed in various models under the scheme.

Implementation and monitoring of the work/scheme of different models are being done in the state for last 3 years. Planting work is being done in selected sites.

As per detailed project report, the total amount of Rs.33367.993 lakhs will be spent in the state by 2021, under which 27,666.8 hectares of land is to be planted. The plan is to be implemented in 20 districts of the state. The scheme has been expanded in 18 districts till the financial year 2018-19. This plan will prove to be effective in the conservation & rejuvenation of River Ganga and its biodiversity.

Forestry work is necessary for the protection of the extinct species of living beings and for balance and maintenance of food chain.

**Progress in Financial Year 2016-17**

A total of Rupees 603.92 lakh was sanctioned for the implementation of scheme. By the end of Financial Year 39,908 plants of Mango, Neem, Jamun, Peepal, Bargad, Gamhar, Imli, Arjun, Harre and Baheda have been planted in five forest divisions of the state. Twelve sites of Patna, one of Munger, five different sites of Vaishali, three sites of Bhagalpur and eight sites of Begusarai forest division have been treated through forestry activities. A standard SOP has been made available to the concerned forest division.

**Progress in Financial Year 2017-18**

A project worth Rs. 18.88 crores was sanctioned and amount of Rs.14.00 crore was released. About 85,705 plants of Mango, Neem, Jamun, Peepal, Bargad, Gamhar, Imli, Arjun, Harre and Baheda have been planted in seven forest division of the state on sites through forestry activities. Seven sites of Patna, one of Vaishali, three of Munger, two of Bhojpur, one of Saran, eight of Bhagalpur and five of Begusarai forest division were selected for the plantation activity.

**Progress in Financial Year 2018-19**

In this year, Ganga shubharambh saptah was organised in 18 forest division of the state. The state has got its flagship program of *Har Parisar, Hara Parisar*, being executed, which has been extended to Namami Gange program also. A total of 79,706 plants have been planted in different institutions of the State under the "Ganga vriksharopan Abhiyan".

Agricultural landscape model plantation activities have been started in the state in which plants are made available to the farmers of the Ganga gram. Mango, Litchi, Guava and timber species plants are being distributed among the selected farmers. About 65,772 plants were planted on farmer's fields.

A total of thirty sites under eight forest division have been taken up for plantation in the state. The overall response of the people has been quite positive for the scheme. The main reason is the choice of species under the scheme. People have welcomed the plantation of native species in the scheme.



**B**ased on DPR prepared by FRI, the state govt. of Jharkhand prepared another state specific DPR on its approved rates for various forestation activities. Under the Namami Gange program five major interventions are being carried out for afforestation along the banks of Ganga in the state of Jharkhand.

**1. Plantation along river banks of Ganga-** Large scale plantations are being raised along the river banks. They are being raised in multiple rows covering different species like



Arjun (*Terminalia arjuna*), Jamun (*Syzygium cumini*), Mahogany (*Swietenia mahagoni*), Shisham (*Dalbergia sissoo*) etc. to add to



Kanhaiya Sthan Plantations

beauty and experience of aquatic travel through Ganga. Different flowering species like Jarul (*Lagerstroemia speciosa*), Gulmohar (*Delonix regia*) etc. are also being raised.

**2. Block plantation-** To add to vegetation in the ganga catchment area, plantations in block are being raised within 5 km of Ganga. These block plantation areas also have provision for soil and water conservation measures like contours, gully plugging, silt detention dams etc. They also have provision for entry point activities to cater to pressing water and other needs



Vrikash Raksha Bandhan



Plantation in establishment

of neighbouring villages. Mix varieties of species have been selected

**3. Gabion plantation-** They have been added with objective to add to the beauty of adjoining habitations of Ganga. As such, this year around 4000 gabions have been installed at prominent locations. Provisions have also been made to plant trees along railway lines to add to the experience of train journey. Mostly flowering species are being planted in these gabions.

**4. Ecotourism & skill development-** Efforts are being made to include and develop ecotourism spots lying in the catchment area of Ganga most notably being Moti Jharna, Kanhaiya Sthan and Pir Dargah.

**5. Public participation-** People have participated in huge numbers to plant saplings along Ganga, thanks to the efforts of Ganga Vichar Manch, UNDP, Pathar Vayavasayi Sangh etc. Women participation too was remarkable.

### Benefits out of the project

1. To check soil erosion along the banks, which is one of the pressing challenge of the area. Each year huge chunk of lands is lost to erosion.
2. To add to the beauty of nature and to aquatic travel through ganga.
3. To conserve the fauna present in Ganga.
4. To check unhindered flow of pollutants into the river.
5. To rejuvenate sources of water in hills along the bank of Ganga.
6. Prime objective of gabion plantation is to add to the green space of city and to enhance its aesthetic value.
7. To enhance the self-cleaning capacity of Ganga.
8. To add to water retaining capacity in the catchment area of Ganga.
9. To promote ecotourism and add to livelihood capacities of people living near Ganga.



Van Mohatsav Celebration

West Bengal is one of the five States implementing the Project Forestry Interventions for Clean Ganga, being implemented by National Mission for Clean Ganga Ministry for Water Resources, River Development & Ganga Rejuvenation, Govt. of India.

Out of the total 2525 Kms. of length, 569 Kms. of Ganga flows through West Bengal covering 15 districts and 22 forest divisions of the state - 5 kms on either side of main course of Ganga (538 Kms.) and 2 Kms. on either side of 7 major tributaries-Ajoy, Bansloi, Damodar, Dwarkeshwar, Kangsaati, Mahananda & Mayurakshi, which are proposed to be developed. Area of the river scape is 18442 sq.kms. which comprises of 22.77% geographical area of the state. The wetlands of the Gangetic



plains and Sunderbans form integral part of the river system in the state. The project is proposed for a period of 10 years starting from 2016-17.

In West Bengal, the project is to be implemented with an outlay of Rs.54755.34 lakhs. The scheme includes 14 treatment models including afforestation of the catchment zone, soil & moisture conservation, wetland conservation and Sunderban Eco-System restoration. The treatment & conservation models are supported by activities like research, capacity building, awareness campaign.

#### **Constitution of State Level Program Steering & State Level Implementation Committees**

Government of West Bengal has constituted a State Level Program Steering Committee under the Chairmanship of Chief Secretary & State Level Implementation Committee under the Chairmanship of Principle Chief Conservator of Forests and also constituted a State Project Management Unit with Project Director.



Plantation activities in progress



The project is being implemented in the districts of Hoogly, Howrah, Bankura, Purulia, Birbhum, Burdwan, Malda, Nadia, Murshidabad and Darjeeling.

#### **Annual Plan of Operations, 2016**

NMCG sanctioned Rs.11.16 Cr. for 'advance cum creation' of 830 ha. for the year. Actual Plantation achievement was 50 ha.

#### **Annual Plan of Operations, 2017**

NMCG sanctioned Rs.8.48 crores for 'advance cum creation' of 911 hac. of plantation. Actual Plantation achievement was 588.05 ha.

#### **Annual Plan of Operations, 2018**

For the year 2018-19, annual plan of Rs 9.09 Cr. is sanctioned, which is proposed to create plantation program of 1046 ha. including 455 ha. of forest land and natural landscape, 75 ha. of barren land and to make 207 ha. of avenue plantation.

Under Ganga Gram initiative, the State has taken up villages along Ganga and the selected tributaries and intends to take up the plantation in the season 2019. The State has sanctioned Rs.10 Crores for this initiative. The site inventorization had started.

In one of the major innovative initiatives under Forestry Intervention, the State has started the program 'Urban Avenue Plantation'. Under this scheme, urban institutions/towns have been selected in Purulia District, Bishnupur in Bankura District, Ganga Sagar in 24-Pgs. (South) District, Kurseong in Darjeeling District, Katwa in Burdwan District, Santiniketan in Birbhum District, Barrackpore in 24-Pgs. (North) District, Mayapur in Nadia District, located with-in the treatment zone of the scheme.

The towns are saturated with plantation of profusely blooming species like Bahunia, Cassia Pistula, Jacaranda, Tabubia, Sparatoria. Nearly 1 lakh of 2 year old seedlings of 10 ft. height have been planted under the scheme. The project has received good public appreciation.



Plantation activities in progress

**G**anga plains are agriculturally the most productive belt providing food for nearly one-third of the India's population. Hence, their reliance on Ganga and her tributaries is inestimable. The farmers have gainfully utilised the potential of the Ganga plains to cultivate their lands and raising crops in such a way, as to keep the soil alive and in good health for a sustainable production. These areas also provide eco-friendly pollution free environment for an organic farming system.

The Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWRD&GR) signed a Memorandum of Understanding with the Ministry of Agriculture and Farmers Welfares (MoA&FW) to promote organic farming on the banks of the Ganga in five Ganga basin States, namely, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal. The MoA&FW released an amount of ₹1100.26 Lakh for the purpose from the Rashtriya Krishi Vikas Yojna fund during the year 2017-18. In the Chamoli, Uttarkashi, Pauri, Rudraprayag and Tehri districts of Uttarkhand, organic farming practices are going on successfully in over 1300 hectares of land under the program head Swachhta Action Plan (SAP), Namami Gange Clean Abhiyan. In Bihar also, as many as 103 clusters have been selected for pilot projects in the districts of Bhojpur, Buxar, Patna, Saran and Vaishali where exposure tour, training and registration under the Participatory Guarantee system (PGS) have been initiated.



**Training of Farmers under Sawchhta Action Plan (SAP), Namami Gange Clean Abhiyan**

provide significant opportunities for promoting local entrepreneurship. It addresses the objectives of 'Swachh Bharat' and 'Healthy India'.

India has a wealth of medicinal plants. It is estimated that the Indian herbal industry uses nearly 960 plant species generating a turnover of more than ₹80 billion per annum. There is considerable scope for export of Indian herbal products. Currently, herbal exports include medicines of AYUSH (Ayurveda, Unani, Siddha, and homoeopathy) products, which occupy a 3% share of the total Indian pharmaceutical exports.

The National Mission for Clean Ganga has sanctioned a project 'Promotion for Cultivation of Medicinal Plants on Ganga Basin in Uttar Pradesh' in August 2018. The project is to be implemented along the catchment area of 2500 hectares of river Ganga in the Allahabad to Ballia stretch in 40 blocks of eight Districts of Uttar Pradesh.

The decision to plant high value medicinal herbs and plants in these green belts dovetails with the promotion of organic farming. This will also boost efforts at improving the health and hygiene of people, encouraging entrepreneurship as well. It will revive India's traditional medicine. High value medicinal plants being grown in 150 panchayats of five districts of UP is just a good beginning. The results expected in the next two years will blaze a new trail of innovation in agriculture and significant jump in the export of herbs and medicinal plants. This momentum in their production and export will give a filip to the local ancillary industries.

Finally, these green organic 'health belts' hold out a promise, if carefully tended, in course of time to become repositories of rare herbs and medicinal plants like the Chelsea Physic Garden on the Thames in London, first established by the Worshipful Society of Apothecaries in 1673, and which has over 5000 different medicinal and edible herbs and plants where students come to this day to study. As these belts along the Ganga develop, India can become the repository of herbs and medicinal plants in Asia.



**Organic Paddy Production, Year 2018 - Bagwan**

In conventional farming, the farmers use synthetic fertilizers and pesticides. The trace metal toxic contaminants reach the human body through food chain and cause serious health issues. The water soluble nutrients of pesticides when carried to lakes and stream through leaching and surface run off cause eutrophication as manifested by the excessive growth of algae and other water weeds on the water surface leading to oxygen deficient condition.

In order to mitigate the above mentioned negative impact of the conventional farming in the Ganga plains, the project aimed at promoting organic farming seeks to use swathes of green belts along the river for organic farming and to decontaminate the cultivable lands. The organic farming involves the careful handling of the environment and resources in such a way that the soil stays healthy- rich in organic matter, nutrients and microbial activity as well as provides a potential solution to the challenges being currently faced like depletion in soil fertility, water pollution as well as health hazards. It is associated with greater biodiversity of plants, animals, insects and microbes as well as genetic diversity. Soil which is cultivated by organic practices like composting, green manure and symbiotic associations, hosts thousands of beneficial bacteria and these bacteria and fungi break down chemicals, plant residues into useful soil nutrients that improve soil moisture, water retention and water infiltration. The activities envisaged under the project



**Mixing of earthworm in Compost pit**

**What is Geotagging:** Geotagging is the process of adding geographical information to various media in the form of metadata. The data usually consists of coordinates like latitude and longitude, but may even include bearing, altitude, distance and place names. Geotagging is most commonly used for photographs and can help people get a lot of location specific information about where the picture was taken or the exact location of a friend who logged on to a service. Geo tagging can be used for planning and monitoring of various development projects.

**Geotagging for planning** – Geotagging can also be used for more efficient planning. For example, we can Geotagg all the common facilities in a village or city or add attribute information along with Geotagged data. Attribute data may contain type of asset (hospital, school, Post office, bank, road, rail network, bridge, Medical store, Government office etc.), type of services available, date of construction of building, operating timings of facility, physical facilities available etc. Once all this information is collected from the ground, collected data is transferred to Central server using a secured network. We can visualize all the collected information with spatial distribution on Geo portal like Bhuvan. By visualization of geotagged assets on the Bhuvan, we can identify the Gap areas and plan the future development accordingly. We can even combine the Geotagged data with census data and can make development plan for the village or city. Various MIS and GIS tools can also be used for decision-making.

**Benefits of Geotagging based planning**

- Easy to identify the Gap Areas.

- Spatial distribution of existing Facility can be visualized.
- Generate a central Database with all vital information
- Helps in Logical Planning.

**Geotagging for Monitoring** –Geotagging can be used for monitoring the growth phase or changes in project or object. Targeted Project can be Geotagged (along with Time stamping) with photographs and attribute information at different times. For example, if one wants to monitor the developments of construction works for some project, under which construction areas it is happening simultaneously across India, firstly, we need to Geotagg the Projects at different times along with photographs and attribute data. After each Geotagging, data is transferred to Central Server using secured network connection. Once all the Geotagged photographs and attribute information is available on Geo-Portal, we navigate through photographs and attribute data collected at different times for the same location (project) and assess the progress of project.

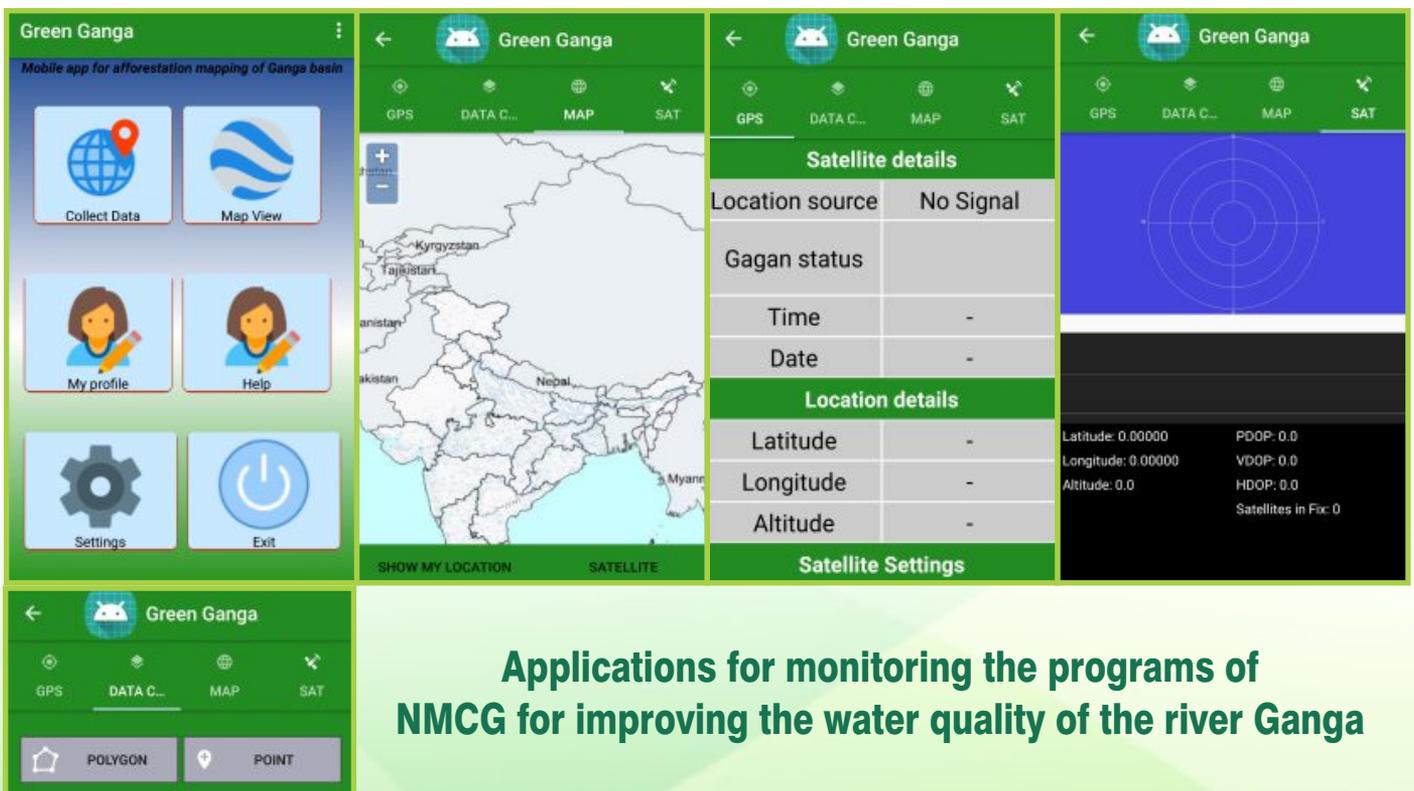
In the same way, Geotagging can also be used for monitoring of different kind of activities including vegetation and plants monitoring.

**Benefits of Geotagging based Monitoring**

- Bring transparency into the system.
- Progress can be monitored from remote central location.
- Spatial distribution of existing facility can be visualized.
- Generate a central Database with all vital information.

The ongoing afforestation program in Ganga basin is going to adopt geotagging technology. Public can visualize the status of afforestation program on Bhuvan Ganga geoportal.

## Green Ganga App



**Applications for monitoring the programs of NMCG for improving the water quality of the river Ganga**

9 जुलाई, 2018 – 15 जुलाई, 2018

उत्तराखण्ड, उत्तर प्रदेश, बिहार, झारखण्ड और पश्चिम बंगाल

### गंगा के जीर्णोद्धार में जंगलों की भूमिका

देश में श्रद्धा का पर्याय माने जानी वाली 'गंगा नदी' अपने ऊपर बढ़ते दबाव और प्रदूषण के कारण संकट में है। नदी के आस-पास स्थित जंगल और उनके फैलाव के कारण नदी में जल की उपलब्धता एवं गुणवत्ता बहुत अधिक प्रभावित होती है। इसके अतिरिक्त, जलवायु परिवर्तन के मंडराते खतरों के बीच, नदियों में जल संसाधनों की उपलब्धता और प्रवाह को नियंत्रित करने के लिए जंगलों की भूमिका और महत्वपूर्ण हो जाती है। जंगलों और नदी प्रवाहों के बीच समन्वय स्थापित करने के लिए तत्काल हस्तक्षेप करना समय की मांग है।

तटवर्ती जंगल, 'प्राकृतिक प्रतिरोधक' तथा 'जैविक फिल्टर' का कार्य करते हैं और जल संसाधनों के संरक्षण तथा इसके शुद्धिकरण के कार्य के लिए सबसे प्रभावशाली तंत्र के रूप में अपना योगदान देते हैं। नदियाँ सभ्यता के 'प्रहरी' के रूप में जानी जाती हैं क्योंकि ये मनुष्य द्वारा प्रकृति से की गई छेड़छाड़ के कारण होने वाले खतरों से पहले ही सजग कर देती हैं।

नदी की जैव विविधता की सुरक्षा और नदियों द्वारा प्रदान की जाने वाली वस्तुओं और सुविधाओं के लिए सफल नदी संरक्षण, पुनः संचयन और प्रबंधन जरूरी है। अतः नदी संरक्षण के लिए वैज्ञानिक आधार पर वृक्षारोपण की सतत आवश्यकता है। इससे नदी पारिस्थिति प्रणाली की एकता सुदृढ़ होगी। गंगा किनारे बढ़ती पारिस्थिति की चुनौतियों को देखते हुए इसके तटवर्ती क्षेत्रों में इसके दोनों ओर वनरोपण संबंधी गतिविधियाँ शुरू की गई हैं।

### गंगा वृक्षारोपण अभियान - सार

गंगा के जीर्णोद्धार में वानिकी के दो प्रमुख उद्देश्य हैं - पहला, गंगा तथा उसकी सहायक नदियों से संलग्न मध्यवर्ती क्षेत्रों को जंगलों/वनस्पतियों से आच्छादित करना और दूसरा, नदी तटों के पास स्थानीय लोगों के लिए इससे आजीविका के उपयुक्त अवसर खोजना। राष्ट्रीय स्वच्छ गंगा मिशन, नदी के तटवर्ती 05 राज्यों के वन विभाग के साथ कार्य करते हुए, गंगा नदी के तटवर्ती क्षेत्रों के 05 किलोमीटर बेल्ट में वृक्षारोपण तथा 'हरित गंगा' के उद्देश्य से स्थानीय लोगों को भी जोड़ने के लिए प्रयासरत है। गंगा को स्वच्छ तथा हरा-भरा रखने के उद्देश्य से, लोगों के हितों को ध्यान में रखते हुए गंगा किनारे बसे इलाकों में बहु आयामी स्तर पर 'गंगा वृक्षारोपण' पखवाड़े का आयोजन किया गया जिसमें स्थानीय वन प्राधिकारियों, स्थानीय प्रशासनिक प्राधिकरणों, गाँवों तथा शहरी समुदायों, स्वयंसेवक दलों, स्कूलों तथा कॉलेज छात्रों तथा विभिन्न सरकारी तथा गैर-सरकारी एजेंसियों को भी जोड़ा गया। इसका लक्ष्य, सतत आधार पर वृक्षारोपण तथा गंगा के प्रवाह को अविरल तथा गंगाजल को स्वच्छ रखने के लिए सभी की भागीदारी सुनिश्चित करना है। गंगा तट को हरित तथा गंगा जल को स्वच्छ रखने के लिए विभिन्न उम्र के लाखों की संख्या में लोगों ने शिरकत की, जो आह्लाद दायक है। इस अभियान में गंगा विचार मंच के कार्यकर्ताओं और गंगा प्रहरियों का महत्वपूर्ण योगदान रहा। केवल ऐसे अभियानों से ही गंगा के जीर्णोद्धार अभियान को जन-आंदोलन का रूप दिया जा सकता है जिसके परिणामस्वरूप, इस पवित्र नदी के संरक्षण, सुरक्षा तथा पुनः संचयन में हर व्यक्ति अपनी जिम्मेदारी निभा सकेगा।



### गंगा वृक्षारोपण अभियान की झलकियाँ



आइये मिलकर गंगा किनारे वृक्ष लगाएं

## Indian and German Governments work together to protect the Ganga

In Uttarakhand, ten sewage treatment plants (STP), nine effluent treatment plants, along with one common effluent treatment plant (CETP) were selected as part of the program to improve urban and industrial waste water treatment plants. The program, carried out by GIZ India on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), is part of the Indo-German cooperation project Support to Ganga Rejuvenation (SGR). As part of the project, GIZ India is supporting National Mission for Clean Ganga (NMCG) and State Program Management Group (SPMG), Uttarakhand as implementation partners. One of its aims is making waste water plants more efficient.

The assessment of Effluent Treatment Plans (ETP) and their efficiency improvement has already benefited five of the nine companies who participated in an Indo-German bilateral project carried with support from Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) India in Haridwar. The companies, which produce consumer goods, cosmetics, beverages, health care products, and sewing thread, saw reductions in the pollution load from their waste water treatment, reductions in their water consumption, and lower treatment costs.

The companies who participated in the program are located at State Infrastructure and Industrial Development Corporation of Uttarakhand Ltd. (SIIDCUL), Integrated Industrial Estate (IIE) Haridwar, located in the catchment area of the River Ganga. Twelve of the fifteen SIIDCUL, IIE sectors are home to over 550 industrial units, which work in a wide range of production sectors, from pharmaceutical to cosmetics. The effluent streams from most of this area are collected and treated at the

industrial estate's CETP.

By improving the operations of the local effluent treatment plants, GIZ India was able to help the local industries meet the inlet norms set by CETP. These more efficient ETPs performed within the pollutant parameters, and the wastewater volume discharged remained within the permissible ceiling. These improvements were implemented with zero cost investment and helped reducing sludge generation by 50%, while increasing waste savings by about 20%. Besides tangible environmental and economic benefits, the measures also created a higher awareness and eagerness to invest in new technologies for waste water treatment.

After the effluent treatment plant operations audit and defining the improvement measures, the experts from GIZ provided support to the industries to implement first measures. The next steps, would ideally focus on a water audit, exploring water conservation and recycling opportunities, as well as the further improvement of the sludge filtration process, and an overall upgrade of the ETP.

Applying these results to the remaining 4 industries (pharmaceutical, hospital and health care, metal finishing, soap manufacturing) is ongoing.

The cleaning of rivers and promotion of integrated river basin management, is one of several areas of cooperation between the Indian and the German Governments. Together NMCG, SPMG and GIZ continue to help facilitate the Support to Ganga Rejuvenation goal to ensure that responsible stakeholders at both the national and state level increasingly apply integrated river basin approaches for the rejuvenation of the Ganga River.

## Experience Results - Case Studies

### A. Pre and Post Intervention Results of ETP of Sewing Threads producing company

Problems identified	Solutions	Costs	Results
Inappropriate operation of sludge treatment procedure since lime was directly charged to the treatment plant	<ul style="list-style-type: none"> <li>Soaking of lime in water before charging it to the treatment plant instead of direct charge (which leads to an increase in sludge).</li> <li>Dividing the tanks for ferrous-sulphates and lime of the wastewater treatment plant, so that these substances do not neutralise each other, become ineffective and end up as sludge.</li> <li>Installation of mixing mechanisms and constant water flows in the tanks.</li> </ul>	No cost	<ul style="list-style-type: none"> <li>About 25 percent sludge reduction</li> </ul>
Low quality raw materials and chemicals and application of wrong concentration resulted in overuse of chemicals	<ul style="list-style-type: none"> <li>Customise inputs according to requirements of wastewater.</li> <li>Use of ferrous-sulphates of at least 80 percent purity and lime with minimum of 75 percent purity.</li> </ul>	No cost. Chemicals of higher quality and increased purity are now purchased at the same supplier for the same price as the chemicals of inferior quality.	<ul style="list-style-type: none"> <li>About 25 percent sludge reduction</li> </ul>
Treated wastewater was unnecessarily disposed.	<ul style="list-style-type: none"> <li>Reuse of treated water in the dyeing process of dark colour yarns which do not require high water quality.</li> </ul>	No cost	<ul style="list-style-type: none"> <li>About 15 to 20 percent of total fresh water used for dyeing of black shades, saved (reduced 80 KLD to 50 KLD; 1 KLD CETP treatment price is approximately 55 INR)</li> </ul>

### B. Pre and Post Intervention Results of ETP of Consumer Goods producing company

Problems identified	Solutions	Costs	Results
Inefficacy in the polishing treatment of the ETP (battery of pressure sand filter (PSF) and activated carbon filter (ACF))	<ul style="list-style-type: none"> <li>Removal of all defunct media from PSF and ACF</li> <li>Systematic and specified media charging of PSF and ACF</li> </ul>	95,000 INR one-time costs + 8,000-10,000 INR monthly media top-up costs	<ul style="list-style-type: none"> <li>No more bad smell in the factory premise</li> </ul>
Inefficacy in the primary treatment of the ETP: operator was not able to remove latex material which was sticking to the PSF and ACF spoiling the function of the filters.	<ul style="list-style-type: none"> <li>Use of polyelectrolyte (PE) for better coagulation in primary treatment</li> </ul>	30,000 INR per month for use of PE	<ul style="list-style-type: none"> <li>Compliance with CETP inlet norms</li> <li>75% reduction of COD level</li> </ul>
<b>Total costs:</b>	95,000 INR + 40,000 INR monthly cost		
<b>Total savings:</b>	~225,000 INR		
<b>Estimated payback period:</b>	1-6 months		

**N**amami Gange is a multi-dimensional and multi-faceted mission for wholesome rejuvenation, protection and management of river Ganga and its tributaries and the entire Ganga basin spanning five states on the main stem and six others adjoining the main stem states. This task of restoring the pristine glory of river Ganga can be successful only with the close and active support, cooperation and assistance by variety of experts, technicians, academicians, public and private entities, individuals across the globe. The sheer number of people who throng and live on and by the banks of river Ganga makes this river system a unique habitat requiring multitude and varied interventions.

NMCG is not only engaging with various technical institutions, environmental experts, water management specialists, public and private bodies in the country, but is also closely engaged with a number of countries and international agencies seeking their cooperation in Ganga rejuvenation efforts. Besides, NMCG is also reaching out to sizeable Indian diaspora spread across the continents with a view to enlisting their support for the most revered river in the country.

As part of this outreach activity and as a sequel to the road show undertaken by Shri. Nitin Gadkari, Hon'ble Minister of Water Resources, River Development and Ganga Rejuvenation in November 2017 in London with Indian diaspora and international agencies, a two day international road show on Clean Ganga – Global Outreach was held in London on 12th and 13th July 2018 under the aegis of High Commission of India, London and co-partnered by Centre for Ganga River Basin Management and Studies (c-Ganga). The NMCG delegation was led by Shri. Rajiv Ranjan Mishra, DG NMCG, comprising of Shri. Rozy Agarwal, Executive Director (Finance), NMCG, Prof. Vinod Tare of IIT Roorkee and Shri. Sanmit Ahuja from c- Ganga. During the course of the two day road show cum seminar, the delegation closely interacted with the representatives of Indian diaspora, technical firms in UK with special expertise in waste water management, data service providers, capital market leaders and other corporate entities to explore ways and means of seeking financial and technical know-how support for the clean Ganga mission.

### Key engagements of the Outreach program

- Engagement on establishment of a UK based charity fund with tax exemptions for mobilizing funds in U.K. for Clean Ganga Fund.
- Demonstration of various waste water management technologies and solutions including for re-use of waste water and other bi-products.
- A seminar on activities being undertaken by NMCG for Ganga rejuvenation and engagement with UK based individuals, entities and corporates.
- Round-table discussion with various capital market leaders, corporate finance groups and other service providers on financing instruments for Ganga rejuvenation.
- Engagement with London Stock Exchange for exploring possibilities on financial support and capital market instruments specially in project financing under 'Namami Gange'.

### Key Outcomes of the International road show

- Decision on setting up of a UK based charity fund for mobilizing funds to Clean Ganga Fund for sponsoring various Ganga rejuvenation initiatives.
- Piloting specific technologies on waste water management and water re-use solutions under the aegis of c-Ganga.
- Identifying areas of project financing and other financial instruments for clean Ganga mission.



**Shri Rajiv Ranjan Mishra, Director General and Shri Rozy Agarwal, Executive Director (Finance) NMCG, engaging with Indian diaspora & UK based Technology Companies and Financial market leaders in London under the aegis of High Commission of India, UK.**



The river Ganga basin comprises of five riparian states of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal and six adjacent states of National Capital Territory Region of Delhi, Haryana, Madhya Pradesh, Rajasthan, Chhattisgarh and Himachal Pradesh. The mighty river during the course of its journey of 2525 kms criss-crosses 54 districts on the main stem of river Ganga and is joined by 46 major and smaller tributaries. The banks and ghats along these districts on main stem and on tributaries are home to almost 50 crores of people constituting about 43 percent of the total population of the country. These districts, therefore, are in the forefront of management, protection and conservation of the river Ganga and its tributaries. The 'Namami Gange' program has for the first time ever formally involved the districts- both from the administrative side as well as from the local populace for taking ownership of River Ganga rejuvenation and protection on the ground level and seek their direct assistance in restoring the pristine health of the river(s).

The River Ganga (Rejuvenation, Protection and Management) Authorities order dated 7th October 2018, which lays down the framework for prevention, control and abatement of pollution in Ganga, for ensuring adequate flow of water and measures for rejuvenation of Ganga, envisages a prime role of the District Authorities in this task and has constituted a District Ganga Committee (DGC) in every specified district abutting River Ganga and its tributaries in the eleven Ganga basin states. Every DGC has been tasked to exercise powers for rejuvenation, protection, restoration and rehabilitation of River Ganga and its tributaries. The functions of District Ganga Committees include identifying activities, which pose threat to the river bed and plan for remedial action, thereof, and to take all administrative and other measures to prevent environmental pollution in the River Ganga and its tributaries. These Committees are to function under the superintendence, direction and control of the State Ganga Committees (constituted in each of the Ganga Basin State) and the National Mission for Clean Ganga.

Every District Ganga Committee in the specified districts are to be chaired by the District Collector with Divisional Forest Officer as the convener and comprising of members from government and the public at large (see box for the composition of the DGC). Every DGC is expected to make a plan of activities to be under taken for protection of River Ganga, prepare budget indicating the funds required for the activities, incur expenditure

and maintain accounts of the activities so taken up. Every DGC is to meet at least once in three months to plan out and review the activities relating to Ganga rejuvenation.

The National Mission for Clean Ganga has taken up this engagement with the districts in the right earnest closely involving them in this national mission of Cleaning Ganga. As on date, 49 District Ganga Committees have been formed and notified through Gazette – 45 on the main stem districts of Ganga and 4 on the districts on tributaries. The DGCs so formed are now closely involved in various projects on the ground and are holding regular meetings for review of the projects and activities and also taking various measures for regulation and protection of the river and its waters within their respective jurisdiction.

National Mission for Clean Ganga has been tasking the DGCs for issuing regulatory orders for pollution control, for overseeing the implementation and operation of the sewerage and effluent treatment plants, involving them in solid waste management from and around ghats, development and cleaning of ghats and crematoria, afforestation activities along the banks of the rivers, bio-diversity conservation and other associated projects. The Committees are also very closely involved in public outreach programs – both in those, which are conducted by the National Mission for Clean Ganga as also by the authorities on the ground with a view to enlisting the support of the local populace and making this a people's movement. National Mission for Clean Ganga has also allotted Rupees Five lakhs to each of the DGCs as first instalment for incurring expenditure on activities and interventions related to Ganga rejuvenation. It is heartening to note that in number of districts, the Collectors/District Magistrates are themselves leading the programs of Shram-dan on ghats and banks, participating in the rallies along with children and youth, interacting with various stakeholders conveying the message for keeping Ganga healthy and clean, leading plantation activities, organizing painting competitions and other such activities. The other official and eminent members of the committees are also actively involved in various activities and programs. The District Ganga committees have truly taken over the ownership of the Ganga rejuvenation mission and are expected to play a key role not only in grounding of the major government schemes and projects but also in moulding the public opinion towards restoring the health and pristine glory of River Ganga.

### Composition of District Ganga Committee

Every District Ganga Committee in each specified District shall consist of the following members, namely: -

The District Collector in the specified District	Ex-officio
Not more than two nominated representatives from Municipalities and Gram Panchayats of the specified District of the state.	Members
One representative each of the Public Works, Irrigation, Public Health Engineering, and Rural Drinking Water Departments, and State Pollution Control Board working in the specified District abutting River Ganga to be nominated by the District Collector.	Member, Ex-officio
Two environmentalists associated with River Ganga protection activities and one representative of local industry association in the specified District to be nominated by the District Collector.	Members
One Divisional Forest Officer of the specified District	Member, Ex-officio
One District official to be nominated by the District Collector.	Member

**The District Collector shall be the Chairperson of the District Ganga Committee and the Divisional Forest Officer shall be the Convener of the District Ganga Committee**



**Shri Raghvendra Singh, Dist. Magistrate, Buxar, leading Dist. Ganga Committee team for carrying out shram-daan**

“A cadre of self motivated volunteers from the local community”

The biodiversity of the Ganga River is under stress due to reduced water availability, habitat degradation, pollution, and unsustainable resource extraction. To conserve the ecological integrity of the Ganga River, and, reduce the direct dependency of the local communities on the river, the National Mission for Clean Ganga (NMCG) has given a project to the Wildlife Institute of India (WII)-Biodiversity Conservation and Ganga Rejuvenation. Through this project WII aims to involve members of the local community as guardians of the river who have been named as the “Ganga Prahari”. The aim of this initiative is to establish a motivated cadre of “Ganga Prahari” to support the local level institutions and monitor the quality of the natural resources of the river by mobilizing local communities at the grassroots level. This was done by:

(a) Creating awareness about the benefits of a clean and vibrant Ganga and a sense of belonging among people towards Ganga River.

(b) Linking local communities and their livelihoods with the various agencies working for a clean Ganga and thereby creating a convergence point at grass root level for such efforts.

Ganga Praharis are the leaders of masses residing in villages and towns along the Ganga River. This cadre is created to ensure the sustainability of efforts in conservation of the depleting biodiversity in the Ganga River. Till date, 664 Ganga Praharis across the five states (Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal) have been involved in the program. Ganga Praharis have been identified through a series of site level consultative meetings and workshops held in select villages located on the banks of the Ganga River in all the five Ganga states. Focus has been made to identify self-motivated individuals who can mobilize others in Ganga conservation efforts. The local communities too, have been approached through other agencies like State Forest Departments, Educational Institutes, National Cadet Corps (NCC), National Service Scheme (NSS) Mahila Mangal Dal, Yuva Mangal Dal, Nehru Yuva Kendras and Ganga Vichar Manch to identify the potential Ganga Praharis at some sites. To ensure a fair and just representation of youth from all the districts and villages located along the Ganga River, one to one discussions were held with the prospective candidates. The primary criterion for identification in a candidate is passion and zeal to serve the Ganga River for maintaining its integrity in terms of its

cleanliness and biodiversity value. These 'Praharis' have to be above 18 years of age on the date of joining the project, preferably from the villages along Ganga River. The younger school students too have been recruited for Bal Ganga Praharis. Trained in ecological monitoring of Ganga Aqualife, plantation techniques, awareness creation and community mobilization activities, these individuals are tirelessly working with the NMCG-WII team. These Praharis were trained through a series of national, state and site level workshops in diverse skills such as, ecological surveys, rescue and rehabilitation of aquatic species, awareness meetings and social interactions and green livelihood skills. They are now capable of assisting any governmental and non governmental organization in site level activities related to the Ganga River at various levels and in different aspects. Ganga Praharis are ensuring protection and conservation of biodiversity of the river in their stretch. They are motivating other members of their community to adopt sustainable practices for resource extraction.

As an output of this initiative, a database of the Ganga Praharis across the five Ganga states has been created. This retrievable database has complete information of each Ganga Prahari. This includes personal information such as age, gender, educational qualification, occupation, skills and interests besides expedient details of their contact along the Ganga River. Details on the number of awareness meetings, training workshops conducted for Ganga Praharis and onsite activities conducted by the Praharis have also been listed. All the organizations associated with NMCG can access this information through NMCG and WII websites. They can further train these individuals in the respective R&D activities and get necessary support at grass root level. In turn, Ganga Praharis will be linked to various institutes of national and international importance. This will enable them to secure their livelihood in a manner that is conducive for a cleaner Ganga with its biodiversity restored. The leadership of these individual shall become a source of inspiration for rest of the society in invoking a sense of belonging to the Ganga River and work in direction of its betterment. By igniting a grassroots level movement for a clean and vibrant Ganga, these Praharis are ensuring Nirmal and Aviral Dhara of Ganga River in their surroundings.

-Ruchi Badola, Deepika Dogra  
Wildlife Institute of India



Ganga Praharis in action for Bio Diversity conservation and public out reach



**The Initiation-**National Mission for Clean Ganga (NMCG) has been working for restoration of Ganga Ecological System and improvement of its ecological health since it was instituted. While doing so, a need was felt to have some working hands on ground for execution of tasks, monitoring of projects and implementing existing programs. To meet this need, an army unit which is popularly known as 'Ganga Task Force' (GTF) came into being. The actual nomenclature of the unit is 137 Composite Ecological Task Force Battalion (Territorial Army) 39 Gorkha Rifles which is being raised wef 1st Apr 2018 at Allahabad on the concept of nine Ecological Territorial Army units already existing in India.



GP photo of raising team

**The Mission-**The unit is committed to undertake its mission through a singular aim which is - "To undertake and monitor ecological and environmental related projects along the River Ganga as well as to run public awareness campaigns for this purpose". While doing so the unit is tasked towards plantation to check soil erosion, management of public awareness/participation campaigns, patrolling of sensitive river areas for biodiversity protection, monitoring of river pollution due to anthropogenic activities, assist local civil administration in management of ghats and assist during floods/natural calamities, etc. To achieve this herculean task, the Unit is authorized a manpower of 09 officers, 29 Junior Commissioned Officers and 494 Other Ranks.

**Journey till Now-**Though the unit is under the process of raising, it has already started with the initiatives like preparation of nursery, conduct of mass public awareness campaigns, plantation drives, patrolling of ghats & patrolling of riverfronts, water sample testing for pollution control. These initiatives have received great appreciation from NGOs, Civil Administration,



Awareness Campaign

student groups, NCC, NSS, various government & semi government organizations and public at large.

**Public Awareness Activities-**With an aim of spreading awareness amongst common populace, the unit has undertaken over 50 mass public awareness programs of community and ceremonial nature. While doing so, it has extensively involved people from all walks of society to include students, teachers,



TEG by CPCB on Water Testing

politicians, social workers, lawyers, businessmen, government and non government employees etc.

**Pollution Control-**Since the pollution control is one of the most important task of the unit a routine weekly check of water quality of the river is being carried out regularly for various



GTF at Sangam

Patrolling of Ghats

scientific parameters. The unit personnel have specially been trained on this by the CPCB and SPCB. The unit is also in the process of mapping the drains, STPs and SPPs.

**Patrolling of Ghats-**Patrolling of Ghats is being carried out extensively to educate locals, visitors, shopkeepers and all stakeholders for keeping the holy river clean of open defecation, garbage disposal and plastic waste. The target populace has willingly started acknowledging the efforts of 137 CETF Bn (TA) 39 GR and started adhering to Ganga Cleaning norms.

**Nursery-**Taking lead from its envisaged role and task, GTF started raising Nursery within the unit premises. The overall capacity of nursery is approximately 80,000 saplings a year.

Towards raising the Unit Nursery, the GTF started Seed Collection from locally available seeds for the Nursery, which are more suitable for the area and have a better germination rate.



Nursery under Preparation

**Plantation**-The Ganga Task Force has also commenced the important task of Plantation and allied activities in the Allahabad



Vetiver Plants at Nursery



Keli/Canna Plantation Devp By GTF in Nursery

region. A number of plantation programs and awareness activities have been conducted jointly with State Forest Department, District and State Ganga committees and successfully participated in Ganga Vriksharopan Saptah and



Plantation activities by GTF

Ganga Haritima Abhiyan. Plantation activities have been undertaken in large number of schools & colleges in the vicinity and also in Allahabad State University. The unit has also adopted modern techniques/concepts of plantation viz Seed balls broadcasting, Vetiver and Keli (Canna) plantation for bio remedial intervention in areas adjoining the River Ganga.



Planatation at Jhusi (Allahabad)

**Formal Launch**-In a solemn ceremony held at Kanpur on 13 Aug 2018 Shri Nitin Gadkari, Hon'ble Minister, MoWR, RD&GR joined by Yogi Adityanath, Hon'ble Chief Minister of UP, Dr. Murlu Manohar Joshi, Hon'ble MP, Kanpur launched the unit into service of nation by handing over unit flag to Col SPS Sandhu, SM Commanding Officer of the unit alongwith Sub Maj Ravindra Singh Bhandari. The event was also graced by Dr. Satyapal Singh, Hon'ble MoS for MoWR, Govt of India, Shri Upendra Prasad Singh, Secy MoWR, RD & GR, Shri Rajiv Ranjan Mishra, Director General, NMCG and Shri Rajiv Kishore, ED (Admin), NMCG besides other dignitaries. Brig. D.S. Chauhan, DDG TA (Eco) also graced the occasion on behalf of the Addl. Dir. Gen. (TA) IHQ of MoD (Army).



Unit flag presentation to Col. S.P.S. Sandhu, SM And Sub Maj. R.S. Bhandari



Team Ganga Task Force with Brig. D.S. Chauhan, DDG TA (Eco) and pipe band of 39 GTC during the function

ऊँचागाँव उत्तर प्रदेश के जिला बुलन्दशहर के सयाना ब्लॉक देश की राजधानी दिल्ली से 110 कि.मी. की दूरी पर गंगा के किनारे स्थित है। ऊँचागाँव राजपूत जाति का गाँव है लेकिन यहाँ के राजा जाट हैं। ऊँचागाँव किला फरीदा परगना जो कि आहार के नजदीक है कुचेसर रियासत में था। 1857 के बाद अंग्रेजों ने मुरादाबाद के एक जाट जमींदार को सौंप दिया उसके बाद आज तक वही परिवार राज करता आ रहा है। यहाँ के वर्तमान राजा सुरेन्द्रपाल हैं जो कि 10 वर्ष की अवस्था में राजा बना दिये गये थे। राजा के निजी निवास होने के कारण इस किले की साज सज्जा काफी आकर्षक थी। 18वीं शताब्दी की वास्तु कला से निर्मित किला, एक एतिहासिक धरोहर के रूप में स्थित है। समय के साथ-साथ महल में आधुनिक सुविधायें जुटायी गयीं और यह राजपरिवार के

घनिष्ठ मित्रों व संबंधियों के लिये छुट्टी बिताने का स्थल बन गया। कुछ समय बाद इस किले को हैरिटेज होटल में बदल दिया गया।

ऊँचागाँव का नाम कभी अमरथिला भी था किन्तु अपनी स्थिति के कारण यह ऊँचागाँव कहलाने लगा। सात एकड़ में फैले इस किले का नाम सूर्य महल था किन्तु समय के साथ ऊँचागाँव में स्थित होने के कारण यह ऊँचागाँव किले के रूप में प्रसिद्ध हो गया। यँ तो महल की मूलभूत सुविधाओं में कोई बदलाव नहीं हुआ है किन्तु आधुनिक सुविधाओं से सम्पन्न यह किला पर्यटकों के आर्कषण का मुख्य केन्द्र है। शहरी जीवन की व्यस्तताओं से दूर इस किले को पर्यटक भव्य, किन्तु सादगीपूर्ण परिवेश में आनन्द लेते हैं तथा पास ही मान्डू घाट से सूर्योदय के मनमोहक दृश्य का भी लुत्फ लेते हैं।



ऊँचागाँव  
किले  
की  
झलकियाँ



नमामि गंगे कार्यक्रम, डी.डी. न्यूज के स्वच्छता समाचार के कई अंकों में प्रमुखता से दर्शाया जा रहा है। जिसके सभी भागों को <https://www.youtube.com/playlist?list=PLxx0m3vtiqMbDdPXImKNVjrHg4CeYBBZD> लिंक पर भी पुनः देखा जा सकता है। डी.डी. न्यूज का स्वच्छता समाचार एक अनूठा प्रयास है जिसके माध्यम से सरकार द्वारा चलाए जा रहे स्वच्छता कार्यक्रमों की सटीक जानकारी आम जनता तक पहुंचाई जाती है।

स्वच्छता समाचार में नमामि गंगे कार्यक्रम के अंतर्गत कई प्रमुख बिंदुओं की चर्चा हुई है, जैसे कि गंगा के लिए बना है 20,000 करोड़ रुपये का बजट, अविरल होगी गंगा की धारा, सीवेज सिस्टम का विस्तार, गंगा स्वच्छता के लिए बनेंगे कानून, पीपीपी मॉडल से स्वच्छ होगी गंगा, यमुना के अस्तित्व के लिए 4,000 करोड़ की घोषणा, वृक्षारोपण अभियान, सर्वे ऑफ इंडिया करेगा नदी की मैपिंग, हरित होगी गंगा, नमामि गंगे योजना में जी आई एस तकनीक, राष्ट्रीय स्वच्छ गंगा मिशन ने बनाया भुवन गंगा ऐप, आदि। इन नियमित समाचार बुलेटिन के माध्यम से घर-घर गंगा सफाई का संदेश पहुंचाया जा रहा है।



गंगा हमारे देश की जीवन धारा है। भारत देश की पहचान है। यह केवल नदी ही नहीं, भारत की आस्था, संस्कृति, परम्परा, सभ्यता की स्वर्णिम इतिहास, प्रेरणा और पूजा है। गंगा भारत की शाश्वत पहचान, आजीविका का उपक्रम और हमारे देश की मर्यादा है। सदियों से गंगा हमारे देश को अपने निर्मल एवं शुद्ध जल से सींच रही है। 2525 कि.मी. की यात्रा में भारत के पांच राज्यों उत्तराखण्ड, उत्तरप्रदेश, बिहार, झारखण्ड और पश्चिम बंगाल से गुजरते हुए गंगा भारत की 43 प्रतिशत आबादी को जीवन देती है।

गंगा की निर्मलता और अविरलता भारतीय राष्ट्रीय जीवन की मौलिक आवश्यकता है। देश का प्रत्येक नागरिक अपनी सम्पूर्ण चेतना से इस समस्या को समझे और अपने हिस्से का योगदान दे, तभी हम स्वच्छ, निर्मल, प्रदूषणमुक्त अविरल गंगा की कल्पना साकार कर सकते हैं। हमारा दृढ़ निश्चय, राष्ट्र के प्रति कर्तव्य बोध और माँ गंगा की रक्षा का संकल्प वर्तमान परिवेश में अनिवार्य ही नहीं अपरिहार्य भी है ताकि गंगा बहे, बहती रहे।

गंगा में हो रहे प्रदूषण को रोकने के लिए भारत सरकार दृढ़ संकल्पित है। सरकार द्वारा बहुत से सार्थक एवं सशक्त प्रयास किये जा रहे हैं। गंगा को अविरल, निर्मल और पूरी तरह प्रदूषण मुक्त बनाने के लिए भारत सरकार युद्ध स्तर पर सामने आयी है। स्वच्छ गंगा के लिए राष्ट्रीय स्वच्छ गंगा मिशन बनाया गया एवं गंगा की स्वच्छता को जनमानस से जोड़ने

हेतु "गंगा विचार मंच" की स्थापना की गयी है। गंगा विचार मंच के अंतर्गत पांच राज्यों के सात प्रांतों में एक प्रान्त संयोजक और 2 सह संयोजक नियुक्त है एवं प्रत्येक प्रान्त के जिलों में एक जिला संयोजक एवं 2 जिला सह संयोजक नियुक्त किये गए हैं, जिसका मुख्य उद्देश्य है विचारों, श्रमदान एवं जागरूकता के माध्यम से जनभागीदारी को सुनिश्चित करना।

प्रत्येक गंगा पर्व व कार्यक्रमों में गंगा विचार मंच के सदस्य मुस्तैदी के साथ गंगा के संरक्षण में अपनी भूमिका का निर्वहन कर रहे हैं। अभी हाल ही में "गंगा स्वच्छता पखवाड़ा" (16 से 31 मार्च), "स्वच्छता ही सेवा" अभियान (15 सितम्बर से 2 अक्टूबर) एवं "गंगा वृक्षारोपण अभियान" (9 जुलाई से 15 जुलाई) के आयोजन को सफल बनाने में भी गंगा विचार मंच के सदस्यों की अग्रणी भूमिका रही है।

गंगा विचार मंच के सभी कार्यकर्ताओं को उनकी सक्रियता के लिए राष्ट्रीय स्वच्छ गंगा मिशन उनका आभार व्यक्त करता है, इस आशा के साथ कि आगे भी इनकी सक्रिय भूमिका से कार्यक्रमों को मजबूती मिलेगी।

आइए, हम सब पर्यावरणीय साक्षरता की इस मुहिम से जुड़ कर घर-घर तक गंगा को प्रदूषण मुक्त रखने का सन्देश पहुँचाएं, क्योंकि जागरूकता, सफलता की ओर उठने वाला पहला कदम होता है।



गत जुलाई एवं सितम्बर 2018 को गंगा विचार मंच के कार्यकर्ता रा.स्व.गं.मि. में आयोजित कार्यशाला में भाग लेते हुए। इन कार्यशालाओं की समीक्षा महानिदेशक, श्री राजीव रंजन मिश्रा ने की और गंगा विचार मंच के सभी कार्यकर्ताओं को विभिन्न कार्यक्रमों में जोर-शोर से प्रतिभागिता लेने के लिए आग्रह किया गया। इन कार्यशालाओं में गंगा विचार मंच के प्रतिभागियों को नमामि गंगे के तहत चल रहे कार्यक्रमों से भी अवगत कराया गया, जिससे इनकी जानकारी जनता के बीच ले जायी जा सके।

**गंगा सेवकों की कार्यशाला**

**रुद्रप्रयाग:** राष्ट्रीय स्वच्छ गंगा मिशन व राज्य परियोजना प्रबन्धन ग्रुप, उत्तराखण्ड के संयुक्त तत्वाधान में रुद्रप्रयाग जिले के गुप्तकाशी में गंगा सेवकों के लिए एक दिवसीय कार्यशाला का आयोजन किया गया। 15 जुलाई को आयोजित इस कार्यशाला में गंगा नदी के किनारे मौजूद पांच जनपदों के 450 से ज्यादा लोगों ने प्रतिभाग किया। गंगा सेवको को गंगा किनारे अवस्थित ग्राम पंचायतों में स्वच्छता के स्तर को बनाये रखने एवं ठोस एवं तरल अपशिष्ट प्रबन्धन के तहत विस्तृत जानकारी प्रदान की गई। प्रशिक्षण में स्वजल परियोजना के

पर्यावरण विशेषज्ञ श्री पी.एस. मट्टा द्वारा प्रतिभागियों को नदी किनारे अवस्थित ग्राम पंचायतों में खुले में शौच मुक्त ग्राम और पंचायतों में स्वच्छता के प्रति जन समुदाय/ग्रामीणों को जागरूक करने एवं कूड़ा निस्तारण हेतु समस्त ग्रामीणों की सहभागिता के लिए गंगा सेवको द्वारा अभिप्रेरित किये जाने पर विस्तृत जानकारी प्रदान की गयी। इस अवसर पर अपर जिलाधिकारी सहित कई गणमान्य लोग उपस्थित थे। प्रतिभागियों द्वारा गंगा शपथ एवं हस्ताक्षर अभियान भी चलाया गया।



**अंतर्राष्ट्रीय योग दिवस**

**देहरादून:** यूनिवर्सिटी मिशन ऑफ एवरनेस ऑन नमामि गंगे-‘उमंग’ हेमवती नन्दन गढ़वाल विश्वविद्यालय, एवं राज्य परियोजना प्रबन्धन ग्रुप नमामि गंगे (उत्तराखण्ड) द्वारा अन्तर्राष्ट्रीय योग दिवस का आयोजन किया गया। अन्तर्राष्ट्रीय योग दिवस पर रुद्रप्रयाग, श्रीनगर, देवप्रयाग, ऋषिकेश और हरिद्वार में योग शिविरों को आयोजन किया

गया। योग शिविरों में योग साधको ने योग के साथ-साथ निर्मल-अविरल गंगा का संकल्प भी लिया। सभी प्रतिभागियों द्वारा योग के साथ-साथ गंगा स्वच्छता अभियान को भी अपनी दिनचर्या में भी भागिल करने हेतु अपनी प्रतिबद्धता दर्शायी।



**अंतर्राष्ट्रीय योग दिवस पर गंगा किनारे योगाभ्यास**



### गंगा क्विज़

**देहरादून:** राष्ट्रीय स्वच्छ गंगा मिशन, जल संसंधान, नदी विकास एवं गंगा संरक्षण मंत्रालय, भारत सरकार एवं राज्य परियोजना प्रबन्धन ग्रुप, नमामि गंगे के तत्वाधान में दिनांक 09.09.2018 को राज्य स्तरीय गंगा क्विज़ प्रतियोगिता का आयोजन किया गया। दो चरणों में आयोजित होने वाली गंगा क्विज़ प्रतियोगिता में उत्तराखण्ड राज्य के राजकीय, सहायता प्राप्त एवं निजी विद्यालयों के छात्र-छात्राओं ने भारी उत्साह दिखाया।

दिनांक 09.09.2018 को राज्य के सभी जनपद मुख्यालयों में आयोजित की गई प्रथम चरण की राज्य स्तरीय गंगा क्विज़ प्रतियोगिता में उत्तराखण्ड राज्य के राजकीय, सहायता प्राप्त एवं निजी विद्यालयों के 5436 विद्यार्थियों की 1812 टीमों द्वारा प्रतिभाग किया गया।

राज्य में प्रथम चरण की गंगा क्विज़ प्रतियोगिता के सफल आयोजन हेतु राज्य परियोजना प्रबन्धन ग्रुप, नमामि गंगे द्वारा स्वजल परियोजना, उत्तराखण्ड पेयजल निगम, उत्तराखण्ड जल संस्थान, वन विभाग, सिंचाई विभाग, वैपकॉस लिमिटेड (नमामि गंगे कार्यक्रम का महत्वपूर्ण कार्यदायी उपक्रम) एवं भारतीय वन्य जीव संस्थान के अधिकारियों / कर्मचारियों की पर्यवेक्षक टीमों

का सभी जनपदों हेतु गठन किया गया। पर्यवेक्षक टीमों में दिनांक 07.09.2018 व 08.09.2018 को राज्य परियोजना प्रबन्धन ग्रुप, नमामि गंगे कार्यालय से प्रश्न पत्रों को सीलबन्ध करके समस्त जनपदों के निर्धारित परीक्षा केन्द्रों के लिए रवाना किया गया। दिनांक 09.09.2018 को प्रथम चरण की प्रतियोगिता का शुभारम्भ गंगा की स्वच्छता एवं संरक्षण की शपथ के साथ किया गया। परीक्षा केन्द्रों में सुरक्षा एवं अन्य सभी व्यवस्थाओं की तैयारी जिला प्रशासन, शिक्षा विभाग, स्वजल परियोजना एवं आई.डी.बी.आई. बैंक के सहयोग से पूर्ण की गयी।

गंगा क्विज़ प्रतियोगिता की प्रथम चरण हेतु जूनियर एवं सीनियर वर्गों के लिए अलग-अलग प्रश्न पत्र तैयार किये गये थे, जो कि हिन्दी एवं अंग्रेजी दोनों माध्यमों में थे।

नमामि गंगे कार्यक्रम के उत्तराखण्ड के परियोजना निदेशक, डॉ. राघव लंगर द्वारा बताया गया कि विद्यार्थियों को माँ गंगा की स्वच्छता एवं संरक्षण लाने हेतु जागरूक करने के लिए गंगा क्विज़ प्रतियोगिता का आयोजन किया गया, क्योंकि आज के विद्यार्थी ही भविष्य में गंगा संरक्षक बनेंगे।



गंगा क्विज़ में बच्चों और बड़ों की भागीदारी के कुछ दृश्य



गंगा क्विज़ के दौरान प्रतियोगी उत्साह पूर्वक भाग लेते हुए।

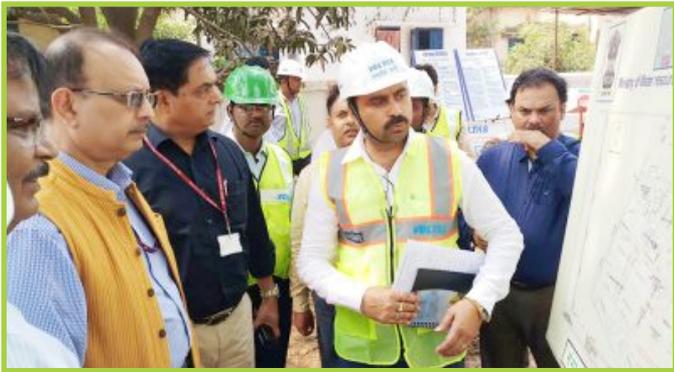


माननीय मुख्यमंत्री, उत्तराखण्ड, श्री त्रिवेन्द्र सिंह रावत गंगा क्विज़ के विजेताओं को चेक प्रदान करते हुए।

बिहार में गंगा करीब 445 कि.मी. की यात्रा तय करती है, जिनमें मुख्य पड़ाव पटना, बक्सर, भागलपुर इत्यादि शामिल हैं। 'नमामि गंगे' कार्यक्रम के अंतर्गत बिहार राज्य विशेषकर पटना शहर में सीवरेज ट्रीटमेंट प्लांट, सीवरेज नेटवर्क, घाटों का निर्माण एवं पुनरुद्धार पर अब जोरों-शारों से काम चल

रहा है। इन सब कार्यक्रमों की चर्चा अब हर जगह सुनाई दे रही है और यह प्रोजेक्ट अब अखबारों की सुर्खियों में भी दिखाई दे रहे हैं। साथ ही महानिदेशक, राष्ट्रीय स्वच्छ गंगा मिशन और अन्य केंद्र एवं राज्य सरकारों के अधिकारियों के मौके पर निरीक्षण भी बढ़ गए हैं।

**बिहार में 'नमामि गंगे' परियोजनाओं की बढ़ती गतिविधियाँ**



**पटना जागरण**  
दिसंबर से गंगा खिबर फ्रंट पर बिताएं सुकून के चार पल  
घाटों को जोड़ने और सजाने का कार्य तेजी से करा रहा बुढ़को, पाथ-वे, हवा-भरा परिसर, लाइटिंग व बेटने की ही रहे ख्यातस्था

40° 29°  
www.jagran.com

**वर्षा भी खराब**  
255 घंटे का भार

**6.6** 5.6  
अवधि का भार और रिजिलि

**20** घंटे 4 रू  
उत्पन्न कराने में सफल

**24** अंश

**शहर में लगेंगे तीन सीवरेज प्लांट**

**बढ़ती सुविधा**  
नगरपालिका द्वारा शहर में तीन सीवरेज प्लांटों का निर्माण कराया जायेगा।

**शहर में लगेंगे तीन सीवरेज प्लांट**  
नगरपालिका द्वारा शहर में तीन सीवरेज प्लांटों का निर्माण कराया जायेगा।

**शहर में लगेंगे तीन सीवरेज प्लांट**  
नगरपालिका द्वारा शहर में तीन सीवरेज प्लांटों का निर्माण कराया जायेगा।

### एक पेड़ की पुकार

देवियो और सज्जनों!

नमस्कार!

हम पेड़ों के जीवन में भी जन्म से लेकर मुरझाने तक किसी अन्य जीवित प्राणी की तरह कभी खुशी कभी गम के दौर आते रहते हैं। जी हाँ, चोंकिए मत! मैं भी आपकी ही तरह जीवित प्राणी हूँ। हमारे जीवन में भी उतार-चढ़ाव आए हैं। हालाँकि पिछले कुछ दशकों से हमने अपने चारों ओर सिर्फ़ अवनति ही देखी है। पर्यावरण में चारों ओर फैली उदासीनता और विनाश के बीच मैं भी किसी अन्य जीवित प्राणी की तरह पूर्णतः आशावादी हूँ और मानता हूँ कि अभी सब कुछ नष्ट नहीं हुआ है। हम सब मिलकर अपनी धरती माता को बचा लेंगे। यही कारण है कि मैं अपनी आत्मकथा — एक पेड़ का जीवन आपके समक्ष प्रस्तुत कर रहा हूँ, इस आशय के साथ कि आप मेरी पुकार अवश्य सुनेंगे।

मुझे वो पल अभी भी अच्छी तरह याद है जब मैं धरती के नीचे से अंकुरित हुआ था, साफ़ और चमकते नीले आसमान के तले मुझे सूर्य के प्रकाश ने सराबोर कर दिया था और मेरे चारों ओर हरियाली ही हरियाली थी। मैंने एक नर्सरी में जन्म लिया था और अपना आरंभिक समय विभिन्न आकार प्रकार के बंधु-बंधवों के बीच बिताया।

और हाँ! मुझे अपने बचपन के वे दिन याद हैं, जब मेरे माली ने बड़े लाड़-प्यार से मेरी देखभाल की थी। वह सर्वोत्तम खाद से मेरा पालन-पोषण करता था, मुझे सूर्य के पर्याप्त प्रकाश में रखा जाता था ताकि मुझ नाजुक पौधे को नुकसान न पहुँचे। मुझे नियमित रूप से पानी दिया जाता था। एक कलम से पेड़ के रूप में बढ़ते देख वह प्रफुल्लित हो उठता था। मैं सुरीली मन्द समीर की आवाज में झूम उठता था, अपने समीप उगे साथ के पौधों से अपनी पत्तियाँ टकराकर जोर से हँसता था और अन्य जीवित प्राणियों के आरंभिक जीवन की तरह प्रसन्न और आन्नदित रहता था। मैं अच्छी तरह बढ़ रहा था और अपने जीवन के अगले पड़ाव के लिए तैयार था।

एक दिन, व्यस्तता के बीच मुझे और मेरे भाइयों को एक बड़ी लॉरी में ढूँस दिया गया। मैंने अपने मालियों को कहते सुना कि समय आ गया है कि अब इन्हें इनके जीवन के अगले पड़ाव के लिए ले जाया जाए अर्थात् मेरे कमाऊ पूत बनने का समय आ गया था।

जैसे ही मुझे अंधेरी लॉरी से बाहर उतारा गया, मैंने खुद को निकट बह रही एक गहरे नीले रंग की नदी के तट पर पाया। वहाँ पर लोगों की भीड़ उमड़ रही थी और कुछ स्नान भी कर रहे थे। शुरुआत में मुझे नदी के किनारे की चहल-पहल कुछ अजीब सी लगी। मेरे लिये क्यारियां बनाई गई थीं जहां मुझे पंक्तिबद्ध तरीके से रोपा गया। मुझे आश्चर्य हुआ कि जब मैं अपने नए घर में व्यवस्थित हो रहा था कुछ लोग मेरी फोटो खींच रहे थे। उन्होंने मेरे पास एक बोर्ड भी लगाया जिसपर कुछ नाम लिखे थे। मुझे नए घर में गृह-प्रवेश उत्सव की अहमियत का अंदाजा नहीं हुआ। जब सभी लोग मुझे मेरे भाई-बंधुओं के साथ छोड़ कर चले गए तब मुझे हकीकत का अहसास हुआ। अब हम इस नई और अपरिचित जगह में अकेले थे। नर्सरी के आराम और महफूज जगह से हटकर हम इस बड़ी-बुरी दुनिया में स्थापित हुए थे, जहां पर चारों ओर लोगों का तांता लगा रहता था। मैं लगभग आत्मनिर्भर हो गया था। पानी की नियमित व्यवस्था नहीं थी, पोषण और प्यार की तो पूछो मत, जिसका मैं आदि हो चुका था। कई दिन और रात गुजर गए और मैं एक नाजुक किशोर पौध से मजबूत और सशक्त पौधा और फिर पत्तों से सुशोभित एक भारी-भरकम टहनियों और मजबूत तने वाला कठोर पेड़ बन गया। और हाँ, मैं रसदार और रंग-बिरंगे फलों से कृतार्थ हो गया। पिछले कुछ वर्षों में मैंने कठिनाइयों से जूझ कर निर्वाह करना सीख लिया था। वो दिन भी देखे जब सूरज की रौशनी से महरूम रहा और कई दिन तो आँधियों और बारिश के थपेड़ों के आघात से मैं तकरीबन उखड़ ही गया था। इंसान, खासतौर पर बच्चे, मेरी टहनियों को खींच-खींच कर, मेरे पत्तों को तोड़कर, और मुझे अपने रसीले फलों से जिन्हें मैंने इतनी देख-भाल कर नाजों से सींचा था, महरूम कर यातनाएं देते थे। कुछ लोगों से मुझे बहुत घृणा होती थी क्योंकि वो मेरी जड़ों में थूकते और गंदगी फैलाते थे। फिर भी कुछ पंछी मेरी टहनियों पर बैठ जाते और घर बना लेते थे, उनको फुदकता देख चारों तरफ़ खुशी का माहौल बना रहता था और मुझे सुकून का अहसास होता था।

मुझे बाद में इस बात का एहसास हुआ कि मैं गंगा जैसी महान नदी के पास खड़ा हूँ, वह नदी जिसमें लोगों की अगाध श्रद्धा है, जिसमें प्रतिदिन लोग आस्था भाव से



## एक पेड़ की पुकार

डुबकी लगाते हैं, लाखों लोग नदी को देवी स्वरूप पूजते हैं तथा मोक्ष प्राप्त करने के लिए अंतिम धार्मिक अनुष्ठान करते हैं। मैं नदी की इन धाराओं के साथ प्रेमगीत गाता था, मछलियां, कछुए जो कभी – कभी बाहर की दुनिया की ओर झाँकते हैं, उनके साथ लुका-छिपी खेलता था और तटों में घूमते पक्षियों के विहंगम दृश्यों का आनंद लेता था।

लेकिन अब हालात बदल रहे हैं। जिन नदियों की धाराओं ने वर्षों से मेरा पालन-पोषण किया, अब मैं मूक दर्शक बन उनको निरंतर टूटते हुए, अवनति की ओर जाते हुए देख रहा हूँ। मैं तो यह देखकर सिहर उठता हूँ कि कैसे एक विशाल नदी आज सिर्फ एक जलधारा बन चुकी है और कैसे तटों पर बसने वाले लोगों के घरों से निकली हर तरल एवं ठोस पदार्थ इसमें डाल दिया जाता है। ये काफी चौंकाने वाली बात है कि कैसे यह निश्चल नदी जिसका रंग नीला और निर्मल होता था, पहले मटमैला हुआ और अब काले में तबदील हो रहा है। मैं उस समय का भी साक्षी रहा हूँ जब इस नदी के आस-पास पक्षियों के विचरण, जल प्राणियों की अठखेलियों, लोगों के आस्थापूर्वक डुबकी लगाने से इस नदी की आन, बान और शान में चार चाँद लगाते थे और मैं आज के परिदृश्य का भी साक्षी हूँ जब मछलियां पानी में शुद्ध वायु के लिए कुलबुलाती हैं, छटपटाती हैं, जब पंछी किनारे बैठने में अपनी तौहीन समझते हैं और लोगों को इस नदी में डुबकी लगाने में शर्म महसूस होती है। आज इसी नदी के किनारे, यहां तक कि मेरे चारों ओर भी उपयोगी एवं अनुपयोगी वस्तुओं के ढेर फैले हुए हैं और चारों ओर दुर्गंध फैल रही है। इन सब चीजों के बावजूद आज भी लोग इसके किनारे अपना आशियाना बसाते जा रहे हैं और आस्था, श्रद्धा, भक्ति में लबरेज लोग डुबकी लगाते हैं। आज नदी के आस-पास अनेक प्रदूषित तत्वों ने वातावरण को इतना प्रदूषित कर दिया है कि न केवल आबोहवा सांस लेने लायक नहीं रही बल्कि इससे मेरा स्वास्थ्य भी बिगड़ रहा है। मेरी शाखाओं में लदे फलों के प्राकृतिक रंग खो गए हैं, मेरे पत्ते भी पीले पड़ गए हैं और मेरे तने भी कमजोर हो रहे हैं। मैं तो यह समझ ही नहीं पा रहा हूँ मेरी ऐसी विदीर्ण हालात के पीछे किसका हाथ है? ऐसा प्रतीत हो रहा है जैसे हर कोई प्रकृति की खूबसूरत भेंट का ऐसे दोहन कर रहा है जैसे मानो आज ही यह दुनिया खत्म हो जाएगी, जो है आज ही है, कल कभी आएगा ही नहीं! इस तरह कुदरत का गला घोंटा जा रहा है।

अतीत में, मैंने अपने भाइयों को उनके भूरी सुनहरी लकड़ियों के लिए हिस्सों में कटते हुए देखा है। मैंने ऐसी कहानियां भी सुनी हैं कि मनुष्यों की जरूरतों के लिए तथा उनके लोभ के लिए मेरे परिवार के बाकी सदस्यों को भी किस तरह से अपनी जान से हाथ धोना पड़ा था। मुझे यह भी बताया गया है कि इंसानों के आशियाने के लिए, उनके आराम के लिए, मनोरंजन के लिए मेरे आस-पास के

बंधु-बंधव को उखाड़ दिया गया है। कल की हरियाली आज बंजर भूमि बनती जा रही है। मैं इस बारे में निश्चित नहीं हूँ कि लोभ, लालसा की यह प्रक्रिया इस दुनिया को और दुनिया में बसने वाले प्राणियों को कहां लेकर जाएगी? मनुष्य की ये अतृप्त लालसाएं प्रकृति के प्राकृतिक छंद को, उसके सूक्ष्म संतुलन को नुकसान पहुंचा रही हैं और प्राकृतिक आपदाओं को आमंत्रण दे रही हैं। मैं और मेरे बंधु आवाज नहीं उठा सकते किंतु आज वास्तविक स्थिति यही है कि धरती माँ संकट में है।

चारों तरफ हो रहे विनाश के कारण मैं उम्र से पहले ही बूढ़ा हो गया हूँ। वे दिन चले गए जब यात्री मेरी छाया में बैठकर विश्राम करते थे और टहनियों से गिरे हुए फलों का आस्वादन करते थे एवं पक्षी मेरी टहनियों पर अपने घोंसले बनाते थे। आज मैं अपने अस्तित्व के लिए लड़ रहा हूँ और मुझे चिंता है कि एक दिन मुझे भी मिटा दिया जाएगा। लेकिन मुझे कहीं दूर से वृक्षों को बचाने, पर्यावरण की रक्षा करने और हाँफती गंगा नदी को स्वच्छ करने जैसी स्वस्थचित आवाजें सुनाई दे रही हैं। यकायक वृक्षों को बचाने और मानवता को बचाने की मांग होने लगी है। हाँ! जागृति आ रही है।

जैसे-जैसे मैं कहानी के अंत की ओर बढ़ रहा हूँ मैं केवल इतना कह सकता हूँ कि मैंने अपना सम्पूर्ण जीवन जीया है। मैंने कई ग्रीष्मकाल देखे और मझे कई तरह के अनुभव हुए। मेरे पास कहने के लिए कई कहानियां हैं जो मेरे भीतर संचित हैं। उनमें से कुछ अच्छी और कुछ बुरी हैं। मैं संतुष्ट हूँ कि मैं प्रकृति के थपेड़ों और मनुष्य के लोभ को झेल पाया और मेरे पास जो भी आया उसे कुछ न कछ दे पाया। हो सकता है कि आने वाले समय में कहीं किसी जगह पर मेरे फल के बीजों से उगे वृक्ष मेरी जगह ले लें और हरियाली बनी रहे।

तब तक... दोस्तों मैं इस अनुरोध के साथ विदा लेता हूँ कि चलिए, हम सब मिलकर हमारी भावी पीढ़ियों को स्वस्थ और समृद्ध बनाएं।

फिर मिलेंगे!

(कृति-रोजी अग्रवाल)



चलो गंगा बचाते हैं, चलो गंगा बचाते हैं,  
ये है मैली, इसे हम स्वच्छता की ओर लाते हैं,  
चलो गंगा बचाते हैं।

जब हिमालय से चले, कितना धवल है,  
ज्यों बड़े आगे, हुआ मैला ये जल है,  
मलिन जल की मलिनता, अब मिटाते हैं,  
चलो गंगा बचाते हैं।

गर हमें, गंगा के तीरथ चाहिए,  
आज हमको, फिर भगीरथ चाहिए,  
हमी में सी रहा जो, उस भगीरथ को जगाते हैं,  
चलो गंगा बचाते हैं।

इस धरा पर आई थी जो, मोक्ष देने के लिए,  
आंसुओ सी बह रही है, पाप धोने के लिए,  
पोंछ आंसू जाह्वी के, अब मनाते हैं,  
चलो गंगा बचाते हैं।

लें शपथ के, अब न हम मैली करेंगे,  
धार अमृत की है ये, माथे धरेंगे,  
ये है जीवन दायिनी, सबको बताते हैं,  
चलो गंगा बचाते हैं।

चलो गंगा बचाते हैं।

डॉ. चन्द्रकांत दीक्षित  
वैज्ञानिक 'स्व'  
केन्द्रीय प्रदूषण नियंत्रण बोर्ड  
क्षेत्रीय निदेशालय लखनऊ

## आईए इन्हें अपनायें





**Planting a TREE,  
Is the KEY,  
To make our Earth  
Pollution FREE**

*Supported by-*

**National Mission for Clean Ganga**

## State Forest Departments

The 'Namami Gange' program is a true example of cooperative federalism in India where the Central and State Governments along with local and municipal authorities work in tandem to plan and execute programs of National importance. The forestry interventions along the banks of river Ganga and its tributaries have been conceived by the well-known Forest Research Institute of India, Dehradun and being implemented by scores of foresters and forest officials of the respective State Forest Departments of Uttarakhand, U.P., Bihar, Jharkhand and West Bengal. All these five riparian states have designated a special unit in their respective forest wings to execute afforestation activities under the 'Namami Gange' program. There is close harmony between the National Mission for Clean Ganga and all the five State Forest Departments since the year 2015-2016 which has led to a massive plantation drive across the banks of Ganga – almost one crore plants are nestling up in the basin.

National Mission for Clean Ganga acknowledges the contribution of the forest divisions of the five states for jointly walking the path of greening Ganga.

The motto remains – Green Ganga, save Ganga.



Uttarakhand



Uttar Pradesh



Bihar



Jharkhand



West Bengal



### NATIONAL MISSION FOR CLEAN GANGA

(Ministry of Water Resources, River Development & Ganga Rejuvenation)

1st Floor, Major Dhyan Chand National Stadium, India Gate, New Delhi - 110002

Telephone : +91-011-23072900-901 | Fax : +91-011-23049568 E-mail ID: admn@nmcg.nic.in

For Feedback write to us at [editorialboard@nmcg.nic.in](mailto:editorialboard@nmcg.nic.in)

Follow us on



[www.nmcg.nic.in](http://www.nmcg.nic.in)



[facebook.com/cleanganganmcg/](https://facebook.com/cleanganganmcg/)



[twitter.com/cleanganganmcg](https://twitter.com/cleanganganmcg)



[instagram.com/namamigange/](https://instagram.com/namamigange/)