

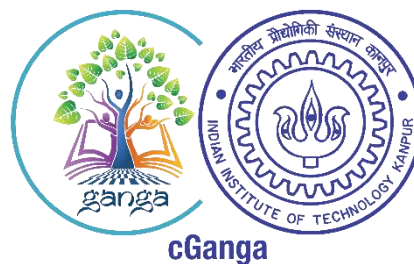


National River Conservation Directorate
Ministry of Jal Shakti,
Department of Water Resources,
River Development & Ganga Rejuvenation
Government of India

APPROACHES AND ACTIVITIES TO RIVER-PEOPLE CONNECT



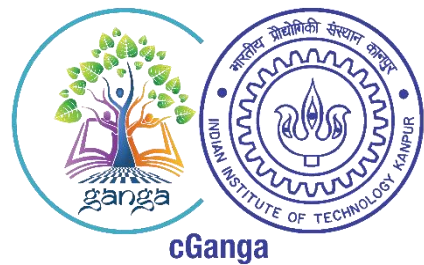
October 2025



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National River Conservation Directorate (NRC D)

The National River Conservation Directorate, functioning under the Department of Water Resources, River Development & Ganga Rejuvenation, and Ministry of Jal Shakti providing financial assistance to the State Government for conservation of rivers under the Centrally Sponsored Schemes of 'National River Conservation Plan (NRCP)'. National River Conservation Plan to the State Governments/ local bodies to set up infrastructure for pollution abatement of rivers in identified polluted river stretches based on proposals received from the State Governments/ local bodies.

www.nrcd.nic.in

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The Centres for Godavari River Basin Management Studies (cGodavari) is a Brain Trust dedicated to River Science and River Basin Management. Established in 2024 by CSIR-NEERI and IIT Hyderabad, under the supervision of cGanga at IIT Kanpur, the centre serves as a knowledge wing of the National River Conservation Directorate (NRC D). cGodavari is committed to restoring and conserving the Godavari River and its resources through the collation of information and knowledge, research and development, planning, monitoring, education, advocacy, and stakeholder engagement.

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www.cganga.org

Acknowledgment

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Disclaimer

This report is a preliminary version prepared as part of the ongoing Condition Assessment and Management Plan (CAMP) project. The analyses, interpretations and data presented in the report are subject to further validation and revision. Certain datasets or assessments may contain provisional or incomplete information, which will be updated and refined in the final version of the report after comprehensive review and verification.

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Preface

In an era of unprecedented environmental change, understanding our rivers and their ecosystems has never been more critical. This report aims to provide a comprehensive overview of our rivers, highlighting their importance, current health, and the challenges they face. As we explore the various facets of river systems, we aim to equip readers with the knowledge necessary to appreciate and protect these vital waterways.

Throughout the following pages, you will find detailed insights into infrastructure related to water resource management, along with development plans focused on urban areas, sanitation systems, and riverfront management, all of which directly impact the health, safety, and resilience of communities across the basin.

This document is not merely a technical assessment, it is a call to action. We urge decision-makers, planners, community leaders, and citizens alike to recognize the vital role of infrastructure in shaping a more equitable and resilient future. Whether you are involved in policy, engineering, environmental planning, or community development, this report is designed to support informed decision-making and collaborative action across sectors.

We extend our heartfelt gratitude to the many stakeholders, experts, and institutions who have contributed their insights, data to this report. Their invaluable input has enriched this report, making it a beacon of knowledge and a practical resource for all who read it. It is our hope that this report will act as a catalyst for integrated and inclusive development, fostering long-term resilience, public health, and environmental sustainability for both present and future generations.

As you delve into the following sections, we invite you to consider both the challenges and the opportunities presented by the evolving needs of the basin. Together, through informed planning and collective responsibility, we can create a future where infrastructure serves not only human needs but also the long-term health of our environment.

Centres for Godavari River Basin
Management Studies (cGodavari)
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1. Introduction

This report on river-people connect engages with the ways in which communities and people interact with river ecologies. Close to 60 million people live on the Godavari Basin, making its size, reach and impact all the more important in thinking about how the river is lived with it, and consumed. Covering the states of Maharashtra, Karnataka, Telangana, Chhattisgarh, Andhra Pradesh, Madhya Pradesh, and Odisha, the Godavari River Basin changes character and identity as it traverses all of these states.

This report discusses the cultural importance of the river basin through a mapping of the mythology, religious practices, and community values linked to the river and its many lives. The aim of this mapping is to provide insight into how Godavari carries deep significance for people across cultures and regions, traversing several languages, dialects, livelihoods, and microcultures.

Additionally, we engage with some case studies linked to the ways in which communities think about water conservation and preservation. The river-people connect is mapped through an engagement with the three 'Rs': restoration, rejuvenation, and responsibility. Through case studies that provide insights into how people, local organizations, and communities of people come together to build on the Godavari Basin's wonderful ecology and cultures.

2. The Spiritual World of the Godavari

Gautami, or Dakshin Ganga or Godavari, is a significant river as one of the seven rivers that hold the great sanctity of Hinduism. According to Hindu Jagruti Samiti (HinduJagruti.org),

सर्वतीर्थेशिरोभूताम् आद्यांगोदांचधीमहि।
धर्मया नः प्रचोदयात् ॥ (संदर्भः अज्ञात)

Meaning: We pray to the River Godavari, the most supreme place of pilgrimage and the first among rivers. Let this Godavari give us inspiration for Dharmacharan (abiding by Dharma) [Ref: unknown]

According to the Hindu mythological history, Lord Shriram spent 12 years in exile on the banks with Seeta. Many scholars and leaders from 'Aryavarta' stayed on the riverbank. The origin of the word Godavari comes from:

1. 'गां स्वर्गं ददाति स्नानेन इति गोदा । तासु वरी श्रेष्ठा गोदावरी । – शब्दकल्पद्रुम [Gam Swargam Dadaati snaanen Iti Goda; Taasu Vari Shreshtha Godavari – Shabdakalpdrum]
Meaning: One who helps in liberating (a person) when he has bathed in her, is known as Goda. The river, supreme among rivers, who help (a person) in attaining Swarga, is Godavari.
2. गौतमस्य गवे जीवनं ददाति इति गोदा । [Gautamasya Gave Jeevanam Dadaati Iti Goda]
Meaning: One who gave life to a cow (that died with Sage Gautam's touch) of Sage Gautam, is Goda (Godavari)!

According to Hindu Mythology, as narrated in the *Bramhapurana*, the sacred Godavari River was born out of divine intervention and penance during the *Satya-Yuga*. At that time, Earth faced an unprecedented calamity - a twelve-year-long drought, which left the land barren and life at risk. In response to this crisis, Sage Gautama undertook intense penance to seek the blessings of Lord Ganesha, praying for rainfall and relief from famine. Through divine grace, rain fell exclusively on his ashram, allowing crops to grow abundantly and enabling Gautama to support visiting sages and hermits from distant lands.

However, this prosperity bred envy among certain fellow sages, who, consumed by jealousy, conspired to defame the sage. They created an illusory cow and left it in his ashram. When the cow began feeding on the grain, Gautama unintentionally touched it, leading to its death. The incident was seized upon by the conspirators, who falsely accused him of committing the grave sin of *go-hatya* (cow slaughter) - a moral and spiritual offense of the highest order. As a result, the fellow sages abandoned their ashram.

Overcome with grief and seeking absolution, Gautama performed severe penances once again - this time to Lord Shiva, pleading for the descent of the holy Ganga to Earth so that he could be purified of the sin unjustly attributed to him. Pleased with his devotion, Lord Shiva released the sacred waters from his *jata* (matted hair), where Ganga had been held, and directed them

¹ Source: Hindu Jagruti Samiti, <https://www.hindujagruti.org/hinduism/sacred-river-godavari>

to flow from Brahmagiri. The river that emerged became known as Godavari, named to distinguish it from Ganga, yet holding the same spiritual potency.

The *Bramhapurana* further states that those who bathe in or even dwell within the vicinity of the Godavari, within the span of one yojana, are granted liberation (*moksha*). As a divine manifestation, Godavari is thus considered both a purifier of sins and bestower of spiritual merit. Interestingly, the text notes that the waters held in Shiva's hair divided into two forms upon release - Ganga and Godavari - each sanctified by intense *tapasya* and divine will.

This myth not only reinforces the river's spiritual and ritual centrality but also illustrates key themes in Hindu cosmology: penance, devotion, cosmic justice, and the merciful intervention of the divine in restoring dharma.

In addition to its spiritual and mythological significance, the Godavari River is revered for its tangible contribution to human well-being, earning it titles such as Jeevandayini (life-giver) and Arogyadayini (health-bestower). Flowing across multiple states - Maharashtra, Chhattisgarh, Telangana, Andhra Pradesh, and Puducherry - the river has enriched the landscape and supported livelihoods for countless generations. Its waters have played a critical role in agricultural fertility, making the surrounding plains lush and productive through centuries of seasonal replenishment.

Godavari is also seen as a natural healer. Traditional Ayurvedic and scriptural sources, such as the *Rajanighantu*, praise the river's water for its curative properties. The following Sanskrit shloka extols the health benefits of bathing in or consuming the river's water.

पित्तातिरिक्तातिसमीरहारिपथ्यंपरंदीपनपापहारि।

कुष्ठादिदुष्टामयदोषहारि गोदावरीवारि तृषानिवारि ॥ – राजनिघंटु, वर्ग १४, श्लोक ३२

Translation:

The water of the River Godavari helps in eliminating ailments related to acidity (pitta), blood disorders, and excess wind (gas); it enhances digestion, destroys sin, cures skin diseases caused by sin, and quenches thirst.

Such attributes elevate the river beyond just a natural water source - it is perceived as a living force of nourishment, purification, and healing. These features further demonstrate how Godavari is woven into the very fabric of local ecosystems, economies, and cultural health practices.

2.1 Religion and Culture on the Godavari Ghats across the Basin

The Godavari ghats hold a sacred significance in the spiritual life of the community across the basin. From the *Mundan ceremony* (Tonsure ceremony) to the coming-of-age ritual to the purification ritual after death, the sacred Godavari is a threshold of transition. The ghats are a vibrant space for everyday intertwining.

Table 2.1 Famous Religious Sites on the River Godavari²

S.No.	Name	State	Dedicated to	Important Festivals	Devotees Footfall
1.	Trimbakeshwar	Maharashtra	Lord Shiva	Kumbh	1.5 crore pilgrims ¹ annually
2.	Nashik	Maharashtra	Lord Shiva	Simhastha Kumbha Mela	Not available
3.	Paithan	Maharashtra	Sant Tukaram Sant Eknath and other saints from Jainism and Buddhism	Paithan Yatra	Not available
4.	Nanded	Maharashtra	Guru Gobind Singh, Hazur Saheb Gurudwara	Guru-ta-Gaddi	Not available
5.	Bhadrachalam	Telangana	Lord Vishnu	Sree Rama Navami	1000-2000 on weekdays/ 4000 on weekends ²
6.	Basara	Telangana	Goddess Saraswati	Basant Panchami: Aksharabhyasa	Not available
7.	Dharmapuri	Telangana	Lord Vishnu	Brahmotsavam	Not available
8.	Kaleshwaram	Telangana	Lord Shiva	Saraswati Pushkaralu	1.2 lakh pilgrims daily ³

² Sources: <https://101reporters.com/>; The New Indian Express (<https://www.newindianexpress.com/states/teelangana/2024/Mar/21/ramalayam-devotees-unable-to-book-accommodation-as-footfall-increases>); The New Indian Express (<https://www.newindianexpress.com/states/teelangana/2025/May/17/massive-devotee-turnout-marks-second-day-of-saraswati-pushkaralu-in-teelangana>); The Hindu Business Line (<https://www.thehindubusinessline.com/news/national/godavari-pushkaram-ap-expects-nearly-4-crore-pilgrims/article7413494.ece>); The Times of India (<https://timesofindia.indiatimes.com/city/visakhapatnam/pushkarams-footfall-touches-1-crore/articleshow/48129726.cms>); The Hindu (<https://www.thehindu.com/news/national/andhra-pradesh/thousands-witness-antarvedi-chariot-festival/article6840890.ece>)

9.	Kotilingala	Telangana	Lord Shiva	Godavari Maha Pushkaram	4 crore ⁴
10.	Rajahmundry	Andhra Pradesh	Lord Shiva	Godavari Pushkaram	1 crore ⁵
11.	Antarvedi	Andhra Pradesh	Lord Vishnu	Kalyanotsavam and Mudrikalankarana	1000+ ⁶

Basara is a pilgrimage site situated on the bank of the River Godavari in Nirmal district, Telangana. The Gnana Saraswati Temple is in Basar, where the children are brought for the learning ceremony called Aksharabhyasam. It is one of the sixteen samskaras in the Hindu religion. Children here perform the exercise of the first letter on the slate, and offer a pen, a pencil, and books to the goddess of knowledge. The temple has a very long mythological history from the Mahabharata, and it also depicts the significance of the River Godavari. After doing Aksharabhyasam, devotees visit the Godavari (Pushkar) Ghat to perform a holy dip in **Dakshin Kashi, Deepdaan, and Harathi (Aarti)**. The Godavari Ghat holds cultural beliefs, social bonding, and a great emotive dependency of its devotees. Economic dependency could be seen on the ghat; truly River Godavari is a lifeline for natives.

In Basara, community engagement strategies could be seen at the time of the river festivals. Although the river Godavari is worshipped throughout the year, some important festivals are there which have resulted in strengthening the bond between the river and the people. “Dominantly, the power of the river to purify and to do away with 'pollution' (a concept associated with non-purity with regards to conducting rituals in Hinduism) has been seen as the essential attribute of most Indian rivers.” (Dahake, 2018, p.4). People continue to perform sacred baths even in visibly polluted stretches of the sacred river. On the bathing ghat of Godavari, various communities from the Hindu religion can be seen predominantly. As considered in *Hindu Dharma* a holy dip in the River Godavari cures every sin of a person; it is a mandatory ritual of devotees, who come to the temple to take a dip in Godavari. The footfall every day at the Basara ghats is around 5000-1000, and on special occasions like Mula Nakshatra, Navratri, Vasant Panchami, it is between 60 thousand to 1.2 lakhs. There are two Godavari Ghats, the first one is under the temple management, and another is run by Veda Pathshala. Every day, Godavari Harathi is done by *Shishyas*, and cleaning and management are done by Veda Pathshala only.



Figure 2.1 Ritual Site Depicting Community Practices

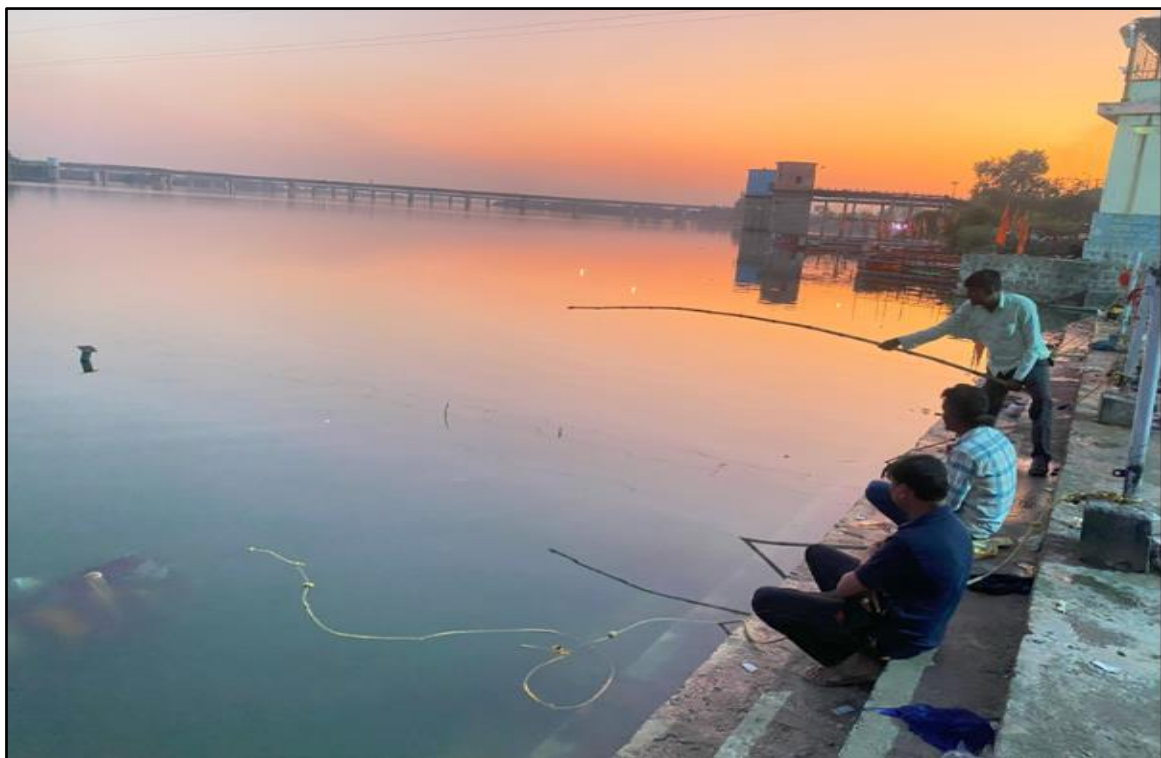


Figure 2.2 Daily Routines Reflecting Community Life

Source: Primary field survey by the cGodavari team

Another pilgrimage site on the Godavari bank is **Paithan, Chhatrapati Sambhaji Nagar**. This site is a significant pilgrimage for the Varkari Sampraday. In our pilot survey, Varkaris made

up 44.27%, of the entire surveyed population of Paithan village. The Varkaris are deeply connected to Eknath Maharaj- a saint and Philosopher. The Warkari Sampraday is a Bhakti movement that brought social harmony, a message of equality, and devotion. The Varkaris, who are followers of Sant Eknath and Dnyaneshwar, practice Abhangs (Traditional singing), community service, pilgrimage, and simplicity in life. There is an annual Pandharpur Wari in Pandharpur, by singing hymns, and spreading the message of equality and devotion via Paithan, the second largest pilgrimage of Varkaris. The Varkaris of Paithan and other nearby villages keep fast on Ekadashi and come to the Eknath Maharaj Mandir to worship and spiritual dip in the holy Godavari River. The participants reported that it's (Godavari) is our Dakshin Kashi, our goddess. The Godavari River is also religiously significant because the saint Eknath Maharaj took **Jal Samadhi** in the river. The villagers celebrate Godavari Prakat Divas annually on Dashmi of Magh Month according to the Hindu calendar. Every year, 11,000 Deepdan is done on the Godavari Ghat. The Eknath Shashti is celebrated, which is the second largest Wari of Varkaris after Pandharpur. Almost 450 Dindis come to this place every year in March month, it is the day of Jal Samadhi Divas of Sant Eknath Maharaj. The survey data shows the significance of the Godavari River in Paithan.

As the majority of people follow Hinduism, they perform Hindu rituals and worship Hindu deities, but the Varkaris from this religious structure are devotees of Sant Eknath Maharaj and Maratha deity Vitthal, the central figure of Varkari tradition. The Varkari holds a unique spiritual identity.

Below, we list some photographs from different sites across key pilgrimage sites on the Godavari River basin with images of the kind of ritual practices observed in these areas.



Figure 2.3 Performing Mundan Sanskar in Gupteshwar, Koraput, Odisha

Source: Primary field survey by the cGodavari team



Figure 2.4 Performing Godavari Harathi by Veda Pathshala, Basara, Telangana.

Source: Primary field survey by the cGodavari team



Figure 2.5 Performing Purification rituals in Gupteshwar, Koraput.

Source: Primary field survey by the cGodavari team



Figure 2.6 6a and 6b Performing sacred bath and Hari path on Ekadashi, Paithan Chhatrapati Sambhaji Nagar.

Source: Primary field survey by the cGodavari team

3. River Communities

In this chapter, we look at some “river communities” through the lens of community conservation efforts, gender and livelihoods. The focus on river communities as life-sustaining to think beyond the river-people connect as only exploitative (Fox et al. 2017). This form of intervention provides insights into how communities and river ecologies are tied together and how each sustains the other. In this chapter, we discuss some of the major community programs that have been successful in supporting and enriching the ecosystem surrounding the Godavari River Basin.

3.1 Community Conservation

In the context of the Godavari River Basin, community engagement is crucial for water conservation and in improving the river’s health. Community engagement does not only include the participation of local communities, but also includes NGOs, local rural-urban bodies, and awareness campaigns for understanding the need for water conservation. Figure 3.1 provides a conceptual framework that illustrates how community engagement involves a collaborative capacity including social networks, traditional knowledge about water conservation, and trust building between the community and law enforcement agencies. NGOs provide important pathways to initiate conservation efforts. From the collaborative work among the locals and different agencies, we can get positive outcomes, which could be for the ecological, social, and economic betterment of the communities. Despite putting in multiple efforts from both sides, persistent gaps include lack of knowledge, language and cultural gaps, and obstacles in service delivery.

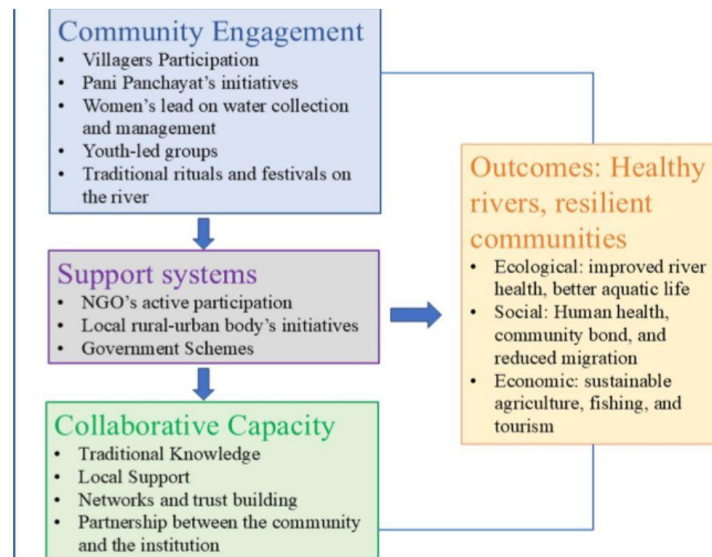


Figure 3.1 A conceptual framework for community engagement for sustainable water engagement³

Below are some examples of community conservation efforts on the Godavari basin, drawn from our fieldwork and literature research. Over the years, a lot of traditional strategies for water conservation have been adopted at the local community level. The local rural body (Gram Panchayat) initiated a sustainable way to raise awareness about water-saving at the household level in the village. In the Godavari River basin, many traditional initiatives for water conservation have been adopted, such as in Bidar, where old water channels are being resurrected. We list some of these efforts below.

3.1.1 Naubad Karez Qanat, Bidar

In Bidar, Karnataka rainfall peaks from 800 mm-900mm. During the summer season, it peaks at 50mm -60mm. Due to Bidar being a drought-prone area, historically, many of its underground water channels or *qanats* were built by Ahmed Shah of the Bahmani sultanate, including providing the facility of one well in every house. Earlier, the Kalyani Chalukyas also worked on water conservation by planning of streams, *nalas*, stepwells, etc. In Bidar, aquifers or *qanats* are very common and serve as vital groundwater sources for drinking, agriculture, industrial, and other purposes. The presence of shallow aquifers facilitated water infrastructure development, such as the Naubad Karez Qanat, to support the community's needs.

Bidar has a history of pioneering traditional and indigenous water harvesting and distribution systems in the region. Agriculturists and artisans have historically depended on such irrigation

³ Source: A conceptual framework has been formulated in the context of the present research to depict the key components and processes of community engagement in water governance.

networks. While farmers used to rely on the Naubad Karez for cultivation, other communities like craftsmen, artisans, and other traders flourished due to the economic stability it provided.



Figure 3.2 Tunnel of the Naubad Karez, Bidar

Source: Primary field survey by the cGodavari team



Figure 3.3 Mouth of the Naubad Karez, Bidar

The pictures represented in Figure 3.2 and Figure 3.3 show the conservation and resurrection of the Naubad Karez, by the NGO Team YUVAA.

3.1.2 Hiware Bazar, Maharashtra

The experience of Hiware Bazar in Maharashtra's drought-prone Ahmednagar district provides a foundational model for strengthening the River-People Connect through radical self-governance and watershed management. By the late 1980s, the village faced a catastrophic collapse: chronic water scarcity, characterized by erratic annual rainfall often below 400 mm (Chowdhury & Indian Institute of Engineering Science and Technology, Shibpur, 2020), had decimated agricultural productivity. This led to a profound socio-economic crisis, including rampant alcoholism, high crime rates, and mass exodus of families to cities like Pune and Mumbai (Hiware Bazaar, 2020). The poverty was staggering, quantified by a 1995 survey showing 168 out of 180 families classified as being Below Poverty Line (BPL) (Hiware Bazaar, 2020).

The decisive intervention began with the 1989 election of Popatrao Pawar as Sarpanch, who galvanized the community to transform drought relief into long-term ecological development. The village's remarkable turnaround was underpinned not by external subsidies, but by self-imposed laws known as the Panchasutra (Five Principles), which enforced strict ecological discipline (Hiware Bazaar, 2020). These mandatory rules were the engine of change: Nasha Bandi (Ban on drugs/alcohol) targeted social decay; Kurhad Bandi (Ban on Tree Felling)

protected the surrounding, severely denuded hills; Charai Bandi (Ban on Open Grazing) enforced stall-feeding to allow grasslands to regenerate and curb soil erosion; Nas Bandi (Family Planning) promoted population sustainability; and Shramadaan (Voluntary Labour) ensured every project was built with local contribution and community ownership (Hiware Bazaar, 2020). Crucially, the community went further, imposing a ban on digging borewells for irrigation to halt groundwater depletion and a strict ban on water-intensive crops like sugarcane, mandating a switch to water-prudent crops like pulses and vegetables (Hiware Bazaar, 2020).

This rigorous framework of self-governance, adopted through the Adarsh Gaon Yojana (AGY) in 1994, enabled massive ecological engineering. Utilizing funds from schemes like the EGS, the community built vital structures, including 52 earthen dams and 4,20,000 back-to-back contour trenches across 70 ha of forest land (Chowdhury & Indian Institute of Engineering Science and Technology, Shibpur, 2020). The result was immediate and measurable hydrological recovery: the groundwater table, which had been at 70–80 feet, surged to a shallow 20–25 feet (Chowdhury & Indian Institute of Engineering Science and Technology, Shibpur, 2020). This recovery was evidenced by the number of wells increasing from 97 to 217 between 1999 and 2006 (Chowdhury & Indian Institute of Engineering Science and Technology, Shibpur, 2020). Furthermore, the enforcement of Charai Bandi allowed grass production to rise drastically from 100 tonnes in 2000 to 6,000 tonnes by 2004 (Neha Sakhuja, 2015).

The ecological stability powered a dramatic socio-economic reversal. The rise in water availability allowed the area under irrigation to expand from 120 ha in 1999 to 260 ha in 2006 (Neha Sakhuja, 2015), enabling farmers to grow three or four crops a year (Chowdhury & Indian Institute of Engineering Science and Technology, Shibpur, 2020). This prosperity was anchored in the flourishing dairy economy, where milk production soared from a meager 150 litres/day in the mid-1990s to 4,000 litres/day (Neha Sakhuja, 2015). Consequently, poverty was virtually eliminated: BPL families fell from 198 in 1999 to just 3 now (Neha Sakhuja, 2015; Hiware Bazaar, 2020). The average per capita income rose from Rs 832 to Rs 24,000 in 15 years (Chowdhury & Indian Institute of Engineering Science and Technology, Shibpur, 2020), leading to Hiware Bazar being branded the ‘Village of Millionaires’, with 50 to 60 families having an annual income over Rs 10 lakh (Neha Sakhuja, 2015). Crucially, this economic revival spurred a phenomenon of reverse migration: over 90 families who had fled to Mumbai and Pune returned to settle in the village, demonstrating that stable water and a thriving local economy are the ultimate incentives for community cohesion (Neha Sakhuja, 2015). The village’s most significant policy innovation, the annual water audit, ensures that consumption is adjusted based on rainfall, guaranteeing that the recovered water security is sustained across varying monsoon cycles (Neha Sakhuja, 2015). Hiware Bazar stands as proof that prosperity is inseparable from a local community’s willingness to enforce strict ecological discipline and assume complete ownership of their shared watershed, earning recognition such as the National Water Award 2007 and serving as a model for the Adarsh Gram Yojana (Neha Sakhuja, 2015).

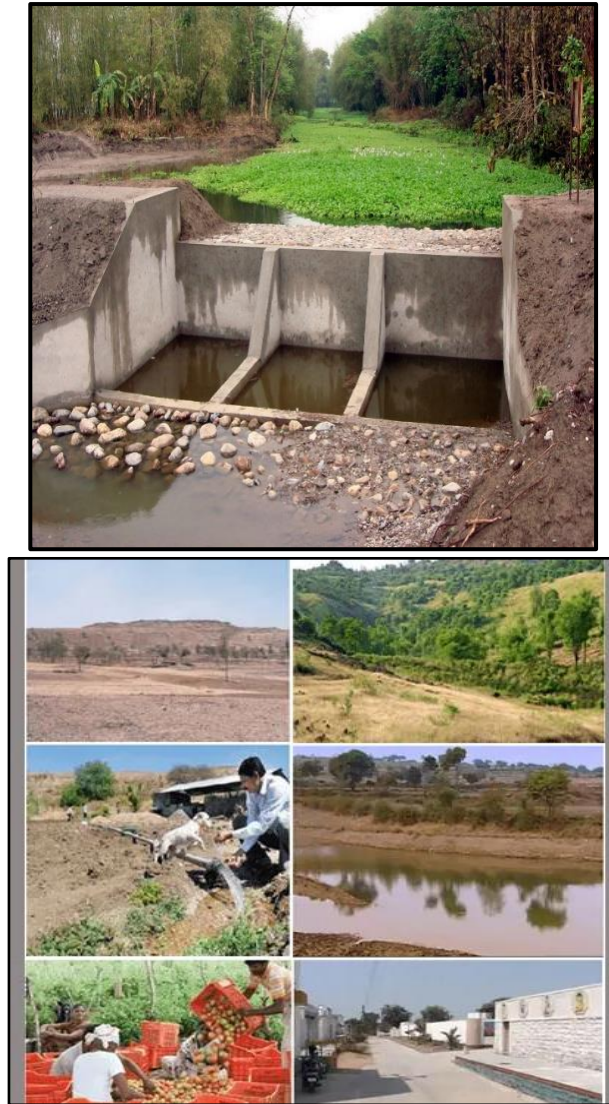


Figure 3.4 Present the images of water conservation efforts in Hiware Bazar in MH⁴

3.1.3 Paani Foundation Water Cup- Mass Community Mobilization

A central objective of this report is to examine how large-scale social movements can restore ecological balance through decentralized, community-led initiatives, demonstrating the power of the people connect. The Satyamev Jayate Water Cup competition, launched by the Paani Foundation (PF) in 2016, stands as a powerful model of this connection, dedicated to making drought-hit Maharashtra water-sufficient (Paani Foundation, n.d.). The Foundation's core belief is that water scarcity is a human problem best solved by empowering the communities that live closest to the river systems, particularly since several participating districts fall within the upper Godavari basin (Lancy Fernandes, 2021).

⁴Source: <https://nfs.inroad.in/best-practice-detail?id=103710>; <https://www.oneindia.com/feature/a-maharashtra-villages-journey-from-punishment-zone-to-award-winning-watershed-management-2519958.html>

The initiative was deliberately framed as a 45-day, pre-monsoon competition, effectively "gamifying" the difficult work of soil and water conservation (Paani Foundation, n.d.-b). This unique approach mobilized thousands of villages to commit to the massive manual labor required, transforming conservation from a burdensome subsidy project into a transformative, communal goal (Paani Foundation, n.d.). The success was built on a rigorous methodology combining science, training, and shared labor, ensuring local stakeholders took ownership. Every village was required to send five representatives, including at least two women, for intensive 4-day residential training (Paani Foundation, n.d.-b). These Jal Sevaks (Water Messengers) were trained using experiential learning to understand water budgeting and the science of decentralized watershed management (Lancy Fernandes, 2021). Upon returning, these leaders spearheaded the physical work, focused on making "running water walk, walking water stand, and standing water percolate" (Paani Foundation, n.d.-b). Key technical interventions included digging Continuous Contour Trenches (CCTs), Earthen Dams, and nala deepening to maximize groundwater recharge (Renjith Kumar & Zacaria, 2021).

The most potent element was *shramadaan* (voluntary labor). The competition required massive participation, serving as a potent tool for social engineering that successfully united villagers across traditional lines of caste, class, and political factionalism under a single ecological mandate (Lancy Fernandes, 2021). While external partners provided over 8.5 lakh hours of earth-moving machine work, this machinery was strictly contingent on the villages first meeting the threshold for manual labor, powerfully emphasizing that human commitment was paramount (Paani Foundation, 2018).

The four years of the Water Cup demonstrated that this blend of social capital and science leads to dramatic ecological gains. Participating communities collectively created over 550 billion litres of water storage capacity (Paani Foundation, n.d.), with 7,006 km of CCTs and 14,960 km of compartment building being constructed (Vikran Engineering Limited, n.d.). This rapid increase in water availability quickly translated into resilience: after the first year, 80% of participating villages were able to end their reliance on water tankers (Paani Foundation, n.d.-b). For example, Velu village, the first year's winner, ended its 20-year dependence on water tankers, even with below-average rainfall (Paani Foundation, n.d.-b).

Table 3.1 Outcomes of Paani Foundation Water Cup (2016_19) ⁵

Metric	Water Cup 2017	Water Cup 2018	Overall (2016-2019)
Villages Participated	1,321	4,025	6,000+
Talukas Covered	30	75	76
People Trained	6,000	20,060	51,000

⁵Sources: Paani Foundation, (2018). Annual Report 2018; Paani Foundation. (n.d.-a,b). Our work: Water Cup and Farmer Cup (<https://www.paanifoundation.in/our-work/>); Vikran Engineering Limited. (n.d) (<https://www.vikrangroup.com/csr-project/paani-foundation>)

Water Storage Capacity Created	8,261 crore litres	22,269 crore litres	50,000 crore litres
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The movement's profound lesson is the priority of knowledge and motivation over financial subsidy. By empowering local stakeholders, the model successfully stabilized rural economies, leading to reports of a halt in seasonal migration due to sustained water availability (Lancy Fernandes, 2021). Furthermore, subsequent programs like the Farmer Cup continued the competitive model to drive demand-side water management, helping top farmer collectives achieve a reported 79.9% increase in per-acre profits in 2023 (KPMG Assurance and Consulting Services LLP, 2025). The Paani Foundation thus demonstrates that a joyful, collective approach, backed by science, is a highly effective template for achieving both ecological restoration and long-term social resilience across river-connected communities.

3.1.3 Coringa Wildlife Sanctuary- Mangrove Conservation, Andhra Pradesh



Figure 3.5 Mangroves of Coringa Wildlife Sanctuary. ⁶

The Coringa case study provides a compelling example of how state-led intervention, grounded in ecological science, is vital for protecting critical riverine biodiversity, thereby strengthening the river-people connect through coastal protection and livelihood support. The Coringa Wildlife Sanctuary (CWS), situated at the confluence of the Gautami Godavari distributary and the Bay of Bengal (Sathiyaselvam et al., 2016), is recognized as a vital marine protected area (Murty et al., 2011). Covering an area of 235.7 sq. km (A.P. Forest Department, n.d.), CWS is consistently recognized as the second-largest mangrove formation in India (“A Study on Mangrove Ecology,” 2017). Declared a Wildlife Sanctuary in July 1978, it was explicitly established to protect diverse flora and fauna, including the globally Vulnerable Fishing Cat and the Olive Ridley Turtle (A.P. Forest Department, n.d.).

This rich ecological resource, formed by centuries of siltation at the Godavari estuary, supports luxuriant growth within the Godavari Mangroves ecosystem, which boasts 35 species of mangrove and associated species (Sathiyaselvam et al., 2016). The sanctuary supports high faunal diversity, including over 120 species of resident and migratory birds (CONFERENCE PROCEEDINGS - GREENER – 2015). As the apex predator, the Fishing Cat (*Prionailurus viverrinus*), classified as Vulnerable by the IUCN, is considered a keystone species here, heavily utilizing the estuarine forest for food and breeding (Harika et al., 2023; Sathiyaselvam et al., 2016).

⁶ Source: Wikipedia/ Wikimedia Commons, *Coringa Wildlife Sanctuary* (retrieved from https://en.wikipedia.org/wiki/Coringa_Wildlife_Sanctuary)

Conservation in the Coringa region is primarily spearheaded by the Andhra Pradesh Forest Department (FD), often in collaboration with NGOs through initiatives like the Joint Mangrove Management (JMM) project (UNDP - GEF - SFA, 2009). These efforts, which began in the mid-1980s, have been highly effective: the overall mangrove area in the Godavari region increased from 15,024 ha to 19,694 ha between 1977 and 2012, demonstrating a significant reversal of degradation (“Spatio-temporal Changes in the Godavari Mangroves,” 2023).

Table 3.2. Spatio-Temporal Land Cover Change in the Godavari Mangrove Ecosystem (1977–2012)⁷

Class	1977	1988	2001	2008	2012
Dense Mangrove	13,636	14,684	15,554	14,729	16,394
Sparse Mangrove	1,388	1,544	1,858	2,888	3,300
Degraded Mangrove	4,510	3,432	2,317	1,200	446
Aquaculture	-	1,235	7,948	8,214	8,339
Beach	3,131	2,153	1,337	1,579	1,179
Casuarina	1,244	1,632	2,166	2,561	1,576
Mudflat	3,220	3,659	2,090	1,799	2,006
Sand	1,141	801	485	1,282	1,899
Upland	35,390	34,931	30,213	30,135	31,624
Industries	–	202	715	1,687	1,905
Water	8,100	8,099	7,634	7,617	7,330
Salt pan	2,637	2,028	2,078	704	303
Total	74,400	74,400	74,400	74,400	74,400

Note: Data available until 2012. However, more recent monitoring from the Forest Survey of India (FSI) in 2021 indicates that this trend has continued, confirming the long-term stability and positive trajectory of the mangrove cover in the Godavari delta.

A key to this success is the use of specialized hydrological engineering; approximately 165 ha of degraded mangroves were restored using the canal method (UNDP - GEF - SFA, 2009). These channels are deliberately designed to improve water circulation and ensure optimal tidal flushing, a controlled flow critical for maintaining healthy fishery resources and promoting the successful recruitment of mangrove seedlings (CONFERENCE PROCEEDINGS - GREENER – 2015). Furthermore, the participatory approach of the JMM model successfully involved

⁷ Source: “Spatio-temporal changes in the Godavari mangroves,” Indian Journal of Geo-Marine Sciences, 2023.

local community-based organizations, moving management toward long-term local ownership (UNDP - GEF - SFA, 2009).

Despite these successes, the ecosystem faces severe threats, primarily stemming from industrialization and pollution. Factories, distilleries, and fertilizer companies along the Godavari river discharge contaminants, including heavy metals such as Chromium (Cr) and Lead (Pb), which accumulate in the estuary (Harika et al., 2023). This pollution poses a direct threat to species like the Fishing Cat, which accumulates higher levels of these contaminants as a top predator (Harika et al., 2023). Locally, aquaculture expansion remains a major pressure, as mangroves are illegally converted into shrimp farm ponds, destroying vital habitat (“Spatio-temporal Changes in the Godavari Mangroves,” 2023).

However, the mangroves are intrinsically linked to the local economy and culture. The local community, predominantly Hindu fishermen, exhibits a strong dependency, with 90% of surveyed respondents declaring the mangroves 'very important' for their livelihood, with fishing being the primary occupation (“A Study on Mangrove Ecology,” 2017; Dahdouh-Guebas et al., 2006). This connection is powerfully reinforced by memory: after the 2004 tsunami, survivors testified that the mangroves served as a natural dyke, encouraging villagers to prioritize preservation (Dahdouh-Guebas et al., 2006). The overall Coringa experience offers profound lessons: significant ecological revival is possible when state-led science is robustly backed, and that this protection simultaneously secures coastal communities, proving that ecological health and human safety are fundamentally indivisible across the river-delta landscape.

The case studies presented across the Godavari Basin underscore that our rivers are far more than physical water channels—they are living ecosystems, cultural lifelines, and community anchors. The evidence illustrates the deep interdependence between river health and human well-being, showing that social revival directly follows ecological repair. The success stories of Hiware Bazar (strict local governance) and the Paani Foundation (mass social mobilization) demonstrate the immense power of community ownership and self-discipline in reversing ecological collapse and achieving near-total poverty eradication. Simultaneously, cases like the Coringa Wildlife Sanctuary prove that targeted state-led intervention, when backed by hydrological science, is vital for protecting critical biodiversity and securing vulnerable coastlines. Ultimately, sustaining the river-people bond requires integrating these successful models: recognizing traditional knowledge (like the Naubad Karez Qanat), investing in conservation through participatory approaches, and enforcing the collective discipline necessary to protect this shared foundation of life.

4. Conclusion

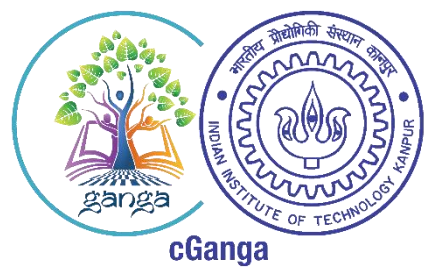
The aim of the report on river-people connect was to highlight some of the ongoing projects linked to the River Godavari that highlight the changing contours and lives of river ecologies. Like changing patterns of weather, and river journeys, people-river is also a constantly evolving narrative. The beauty of this narrative lies in the ways in which sustainability, preservation and valuing diverse ecosystems has always been an important part of Indian social life. It's heartening to document case studies of ongoing conservation efforts on the basin that have helped build the strength and value of Godavari as it continues to add value to the people living on its basin.

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