

# **Residents' Responses to Poor Clean Water Management in India**

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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## **Introduction**

The health and sustainability of the country of India are at risk due to the lack of clean water for all residents. At this point, there is only about 1,000 billion cubic meters of clean water left per person in the country, which will dwindle rapidly given the fact that the water is used for drinking, transportation, irrigation, and electric power through dams (Agoramoorthy, 2014). The water from the country's rivers that residents often rely on for drinking water is heavily polluted with many contaminants (most notably sewage). Only 30% of municipal sewage undergoes proper treatment before being dumped into rivers, and 21% of contagious diseases contracted by residents are related to dirty drinking water (Agoramoorthy, 2014).

The river pollution problem must be fixed before clean water can be provided to all residents rather than having to ration what little clean water is available. With the little drinking water that is available for consumption, it comes as no surprise that the drinking water is unequally distributed among residents. In fact, drinking water is distributed to residents based on differences in "income, caste, and gender" (Vedachalam and Riha, 2015, p. 120). Dam placement and construction have led to a lot of controversy regarding damaging the structures, cultures, and livelihoods of locals in the area. For this reason, dams and other water treatment infrastructure have been viewed as "development tragedies" (Right Livelihood, 2021, para. 7) that ultimately only help to provide drinking water to a specific group of residents, usually in more urban areas. This suggests that there is a "big city bias" (Kumar, 2015, p. 280) present in determining which areas get access to clean water.

This poor use of such a valuable resource has sparked action from the government to attempt to fix this problem. However, these government efforts and proposed solutions have often failed to clean up pollution or fairly distribute water to residents due to lack of management, support, and resources (Schiff, 2014), which prompts citizen action. Citizens have made their cries for better water politics in the country clear through a variety of tactics, ranging from educational workshops to sacrificial demonstrations. One scholar calls these demonstrations “repertoires of contention” (p. 399) as part of social movement theory. “Repertoires of contention” frames social movements as a collection of “codes, meanings, and choices” (Chowdhury, 2013, p. 399) of protesters that depend on the ideology and the political capacity of movements to capture public attention. The first goal of this research is to understand how ineffective government efforts motivated citizens to raise awareness of the effects of unequal water distribution. The second goal of this research is to understand the actions and capacities of social movements to protest against water management policies; the health, social, cultural, and spiritual damage that the country has endured as a result of these policies is another area that will be explored in this analysis.

### **Background on Ineffective Clean Water Distribution in India**

The continued dumping of sewage, trash, industrial effluents, and other pollutants into rivers in India destroys the religious sacredness of the rivers, the ecology of the surrounding environment, and the health and morality of residents. Rivers, according to Mahatma Gandhi, are used by “ignorant men and women” (p. 117) who “violate religion, science, and laws of sanitation” (Vedachalam and Riha, 2015, p.117), as the religion of Hinduism prohibits the offensive destruction of natural, sacred resources (Agoramoorthy, 2014). One prominent example of a sacred river badly polluted by everyday contaminants is the Ganga River, whose

significance in the religion of Hinduism brings many people to its water to read the Vedas (religious texts) and obtain moksha (a release from the cycle of rebirth). Because sewage infrastructure built long ago is not sufficient to meet the growing demands of cities along the Ganga River, the river is heavily polluted by sewage and industrial runoff that goes into the river untreated (Das and Tamminga, 2012).

Because of this ongoing pollution problem, one action that has been put into place by the government was the Ganga Action Plan (GAP) in 1985. This policy, enacted by the National River Conservation Authority in the Department of Environment of India, sought to put limits on the practice of centralization, or putting all the power to develop and manage water resources in the hands of the government (Das and Tamminga, 2012). Rather, this government policy focused on sharing the cost of water resource management among “Centre and State Governments,” according to the policymakers’ website (National River Conservation Directorate, n.d., para. 1). The objective was to implement new sewage treatment plants near urban areas along the river, renovate any existing sewage treatment infrastructure already on the river, and improve wastewater pumping systems. The policy largely failed due to lack of other developed infrastructure in the area to support all these new sewage treatment plants. Subpar power supply left some of these treatment plants and dirty water pumps unable to operate and/or under capacity to process large amounts of dirty water, leaving untreated sewage to be dumped into the river. As a result, India’s 74<sup>th</sup> Constitutional Amendment in 1992 was ratified, putting the responsibility of urban centers themselves to provide clean water to their residents in the hands of local governments (Das and Tamminga, 2012). This is where the “big city bias” (Kumar, 2015, p. 280) largely starts in the history of drinking water treatment for the country.

The Ganga River is just one of many rivers that the government is working to rid of pollution ineffectively. The Yamuna Action Plan, initially implemented in 1993 and continued to present day, is a policy put into place by the National River Conservation Directorate (NRCD) sector of the Indian government to clean up pollution in the Yamuna River. It is of utmost importance to clean this river because 90% of domestic wastewater (containing laundry detergent, chemicals, and phosphate compounds) from New Delhi, the capital of India, ends up in the river. On top of this, 800 million liters of sewage is also dumped into the river every day, and only 35% of this is properly treated (Tewary, 2020). Big city bias continued with this river cleanup policy, as the equivalent of 1.3 billion USD was spent by the government to remove pollutants from the river near “urban centers” (p. 285). This policy has failed to clean up the river’s pollution largely because the scientists and engineers involved in designing infrastructure to provide drinking water base their designs on “economic efficiency” (p. 289) rather than the ecological benefits of eliminating the river’s pollution with a “sustainable share of freshwater” (Mallik, 2014, p. 289). Additionally, the government and designers ignore the views of the public on pollution and fail to involve the community in the cleanup efforts. This shows how even big city bias cleanup efforts fail from an environmental perspective. These failures can be seen in the fact that the river is now more polluted today than it was when the policy was first enacted (Mallik, 2014).

With rivers polluted, there is little clean water left to distribute. One major government policy implemented to address limited clean water distribution was the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) in 2005. As a result of the new responsibility put onto urban centers to provide clean water for residents, this policy focused on executing “fast track planned development of identified cities” (Das and Tamminga, 2012, p. 1658). This is another policy in which big city bias can be seen, as this policy showed favoritism towards larger cities that can

provide city project development plans to qualify for funding to build up water treatment infrastructure. As a result, spending for “urban poor” (Kumar, 2015, p. 280) areas to develop water supply and drainage systems has declined over the years, which provides another incentive to implement more effective centralized policy that balances the water needs of both city and rural areas.

In an ideal world, the precious resource that is clean water would be rationed so that all residents have access to it. With the rivers polluted, the building of dams by urban areas to bring water to cities is an example of how improper water distribution is creating a big city bias that further encourages improper usage of such a valuable resource. This can be seen in the fact that overly centralized planning has led to the creation of “large dams” and “river diversion” without considering the ethical utility and conservation of this resource, following a “humans first” (p. 287) approach. This is because the country favored “large-scale industrialization” through “huge capital investments” (Mallik, 2014, p. 287) as part of the JNNURM.

One example of using dams to provide clean water to only more urban areas is the conflict of the Kengre stream and the town of Sirsi (located in the Karnataka region of India). Sirsi grew rapidly from a small town, leading to a greater demand for water from residents. In response, the local government proposed the construction of a dam on the Kengre stream in 2002 to meet this water demand (Society for Promoting Participative Eco-system Management (SOPPECOM), n.d.). The Save the Narmada movement is an ongoing effort to stop proposed dam development in the Narmada River Valley that began in the early 1980s. In both cases, local farmers were/are upset that water was being taken away from them to help more urban, developed areas. Farmers in both cases argue(d) that damming the stream/valley would lead to dire environmental and social impacts that would cause great damage to the lifestyles of locals in the area.

## **Documenting Social Movements and Motivations**

As a result of poor water resource management and conservation through pollution cleanup efforts and dam placement, there have been many efforts by citizens to protest this and appeal to the government to end it. These efforts range from large scale social movements involving now famous social activists to small protests and rallies. No matter the size of these cries for change, they bring attention to the fact that India's progress towards modernization that it seems to favor will never come until clean water is provided to all residents. All these efforts seem to have similar motivations and repertoires to preserve the culture and health of citizens, along with the environment of the country.

The Save Ganga Movement, founded in 1998 by social activist Rama Rauta, is an ongoing social movement that seeks to stop the dumping of toxic wastes into the holy Ganga River and to persuade the government to remove the waste from the river water (Rauta, 2020a). The movement has brought together citizens, Hindu monks, spiritual leaders, journalists, social activists, and even Prime Minister Narendra Modi to tell the government to rejuvenate the river water (Agoramoorthy, 2014). The website that documents the thoughts of the movement's proponents highlight that they are motivated to clean up the water to bring back its "bactericidal, health promoting, and non-putrefying" (para. 2) properties, showing that they are concerned about the health of residents. This movement also seeks to prolong the Gandhian culture of non-violence and truth, as the source shows that cleaning the river would be one step towards an idyllic, ethical world. This means that cleaning up the river is one way to stop the modernization-focused development of India and to begin treating the environment "as our friend" (Rauta, 2020b, para. 30), an aspect of Gandhian culture. Accordingly, the opponents to river pollution emphasize that continued waste dumping will cause damage to nearby flora and

fauna, which is an aspect of the river pollution that they are teaching to the public through learning workshops and various rallies (Rauta, 2020a). In terms of motivation to preserve the religious value of the river, cleaning the river that stands for every one of the country's rivers (*National Women's Organisation, Pune 2020*) is a way to live a religious life, according to Gandhi. The protestors spotlight the holiness of the river through yatras, or long walks alongside it, that invite participation from the public.

While the Yamuna River may not be as religiously prominent as the great Ganga River, there have still been several small community initiatives to help clean up the pollution in the river when citizens believe that the government is not doing enough. Local students, activists, and citizens near Agra, Hyderabad, and Delhi formed the Yamuna Foundation for Blue Water, a group effort to pick up trash and other contaminants that have accumulated on watersheds. Similarly, the Maa Shri Yamuna Seva Samiti (which means "Friends of Yamuna") collects waste that has been dumped on the riverbanks before it goes into the water. Like those of the Save Ganga Movement, these activists are motivated to clean up the river to protect the health of the 57 million people that rely on the river's water. The Yamuna River also has great significance in Hinduism, as it is worshipped as "Goddess Yamuna" (para. 2), daughter of the Sun and sister of the "God of Death" (para. 2) in Hindu mythology. Because of its connection with death, it is common for people to bathe in its waters to rid their sins and to perform the "last rites of the dead" (para. 2), so it makes sense that reformers for a cleaner river would want to preserve its water to carry on these religious rituals. There is also the ecological argument that the river helps create the alluvial Yamuna in the Indo-Gangetic plain (Tewary, 2020), a large region of fertile land where many crops like wheat and rice are grown (Srivastava et al., 2014). If the river is not cleaned up soon, heavy metals and other toxins will continue to adulterate crops grown



nearby, causing damage to the vital body organs and to the blood of those that consume them (Tewary, 2020). Thus, the peaceful choices of the protesters of Yamuna River pollution reflect the calm and religiously motivated ideology that the citizens' efforts encompass. These efforts preserve the river's culturally rich qualities, making them similar to the efforts of the Save Ganga movement.

Related to the Sirsi dam development conflict, the Kengrehalla Rejuvenation Movement brought together farmers that almost were deprived of water by local dam proposals. Like the Save Ganga movement, the efforts of the dissidents of a Kengre stream dam were motivated to preserve the culture and lifestyle of a local group of people. The Sheeliga tribe built a great number of check dams, manmade farming dams constructed of simple materials like stone to direct water towards crops. The activists argued that the building of a large municipal dam on the Kengre stream would destroy the "native wisdom" (p. 78) of this tribe, as the initial plans to develop the dam had destroyed these check dams and forced an interruption in the lifestyle of the tribe. Cultivation was halted as a result, and women were forced to collect water from different sources for household needs. Arguments between the lower farming class of citizens and the middle class "urban dwellers" (p. 75) broke out, as those living in cities saw the efforts of the farmers as a way to take away "their right over drinking water" (p. 75). Building the dam would create an even greater class divide, as farmers would have less water to grow the products that they bring to city markets. This leads to the last major motivation of these farmers and tribal members, the ecological thought that obtaining water directly from the dammed stream would be bad for resource conservation. Therefore, they proposed "water harvesting structures" (p. 78) and storage tanks to help provide water to urban areas. Once these structures were built, the dam project's initial location was shifted back to the Aghanashini River, a better location that would

stop the breaking of check dams and deprivation of water for Sheeliga tribe farmers.

Unfortunately, farmers in the village of Baleghar along the Aghanashini River suffered interruptions to their lifestyles as a result of this dam, which these farmers opposed (Society for Promoting Participative Eco-system Management (SOPPECOM), n.d.). This social movement's efforts and outcomes demonstrate that the meanings of the protestors living near the Kengre stream to help preserve the culture of the Sheeliga tribe were shaped by the capacity of the movement to influence upper class citizens in urban areas and the environmentally friendly ideology of the movement. This lack of influence is ultimately why the farmers in the village of Baleghar failed to get the dam built on the Kengre stream.

The Save the Narmada Movement is an ongoing effort related to stopping the careless development of dams, similar to the Kengrehalla Rejuvenation Movement. Like all of the other movements mentioned above, the advocates of this movement framed their cause as an environmental movement. It has already been noted that these dams cause forests floods and destroy the habitats of rare species that are local to the area. Like the Kengrehalla Rejuvenation Movement, the opponents to the dam development argue that building large dams to pull excessive amounts of water from rivers is not a good way to conserve such a priceless resource. Instead, improvements to water conservation and distribution should be implemented, including dry farming technologies, smaller dams that cause less flooding, watershed development, and lift (or pump powered) irrigation. Just as with the Kengrehalla Rejuvenation Movement, there is also the social argument used by the protesters that the dam development would destroy the lifestyles of a large group of people that would be evicted from their homes, including farmers, fishermen, laborers, and others that work and sell their products in the area (Right Livelihood, 2021). The Narmada River Valley also holds religious significance, just like the Yamuna and

Ganga Rivers. One study argues that the movement can be seen as one that seeks to preserve the Gandhian cultural idea of seeking truths about the world by preserving the environment. With these motivations in mind, it makes sense that the protesters have used a wide variety of strategies, ranging from marches and passing out pamphlets to *jal samarpan* (sacrificial drowning in the rising waters of the dams) and *amaran anshan* (fasting to death) (Chowdhury, 2013). Clearly, this movement has a lot of public support and uses many strategies to reach the end goal of stopping dam development as a result of its large scale capacity that has garnered international awareness.

### **Discussion of Insights**

Clearly, the protestors involved in the social movements presented here involve many similar motivations for their efforts. In this sense, the only things that definitively sets these social movements apart are the differences in media coverage, success, and global awareness of them. For example, the Kengrehalla Rejuvenation Movement was more successful than the Save the Narmada Movement because the government met the protestors' demands and moved the dam construction. According to Chowdhury's analysis, the Save the Narmada movement has not been fully successful because its repertoires are "extreme" and "militant" and represent "the cultural genocide" (p. 404) of the dam development, causing the government to respond less compared to other social movements. However, these extreme repertoires helped the movement garner national and global attention through increased media coverage, making the Save the Narmada movement more publicly known compared to other social movements (Chowdhury, 2013). This shows that different social movements can both use "strategic" and "expressive" (p. 404) repertoires, but different forms of getting their messages across. Therefore, there are many more differences and similarities between the social movements presented here outside of their

motivations and frameworks, including different cultural contexts, successes, resources, locations, worldwide coverages, and government responses. This is an area into which this research could be expanded.

The information about subpar water treatment and distribution strategies presented in this analysis shows how poor resource and environmental management has destroyed the country's progress towards development and equality. Direct pollution dumping in the rivers and other waterways is one way to look at this lack of development, but another significant cause of this lack of development is poor sanitation practices in India. One study further investigates this aspect of poor sanitation on the country and how it contributes to environmental threats. The poorest people in the country are 47 times more likely than the richest people to practice open defecation in public areas. Stormwater and untreated wastewater often mix into the drinking water supply due to lack of sufficient separation. Poor sanitation alone costs the country 2.44 trillion rupees (54 billion USD) every year. This is due to lack of worker availability from premature mortality due to water borne diseases, health care costs, and implementation of household drinking water treatment units where municipal water is not available for things like toilets and showers (Vedachalam and Riha, 2015). This shows that the topic of lack of development in India can be explored from many perspectives that cannot be touched on in this analysis.

A notable impact of the poor water and sanitation management in the country not mentioned above is that it encourages social limitations. Ethical issues of forced gender roles and sexism have become prominent. For houses that don't have immediate access to water through pipes, women are forced to collect water for their families 81% of the time. Girls are 4 times more likely than boys to be made responsible for collecting water for their families. There

is also silent encouragement of the caste system, as poorer workers in the country are often tasked with “manual scavenging” (p. 120) for sewage, a task that has been given to members of the lowest caste. Therefore, India needs to develop physically by building water treatment infrastructure before being able to develop socially and eliminate these aspects from its society (Vedachalam and Riha, 2015).

One concept concerning why opposition fails to block counterintuitive policy enacted by the government to implement dams or clean up rivers is “Boomerang” (p. 231) policy. For example, the Sankat Mochan Foundation (SMF) opposes polluting the Ganga River (throwing the boomerang). The effectiveness of organizations like this in opposing something greatly depends on the organization’s connections with “domestic and transnational actors” (p. 231) that help them network with international authorities to make their demands well known around the world. The international exposure of the organization’s demands throws large scale opposition (the boomerang) back at the offending government that doesn’t meet these demands. Not every organization is able to garner this kind of worldwide attention, and those that do have proven to have more resources, significant connections to international influencers, and charismatic leaders (Schiff, 2014). Therefore, the reasons why the Save the Narmada Movement or the cleanup of the Ganga River continue to this day go beyond the lack of education about environmental issues. There is an aspect of international awareness of these issues that contributes to whether movements or cleanup efforts are successful.

### **Conclusion**

Through this analysis, we can see that the phrase “lack of clean water” barely scratches the surface in explaining the poor water conservation and usage that is common in India. Until

rivers are cleaned and the government listens to the needs of citizens more when proposing dam designs and pollution cleanup plans, the lifestyles, cultures, and health of citizens will continue to suffer. The current analysis and all others out there concerning this poor water management in India simultaneously highlight how much the country tries to manage this resource well and the many obstacles that make it difficult to do so.

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