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Water Policies and Governance in Bhor Taluka in Maharashtra

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ABSTRACT

Natural resources are essential for the survival of all forms of life on earth. The unsustainable use of these resources in all forms has intensified the competition for multiple uses which would lead to immeasurable depletion. Water policies in the past have engrossed more on water's extension and physical availability without considering its sustainability. This approach has led to poor management of institution structure and water resources. We are encountering challenges due to decreased water availability caused by population growth, declining water quality, over-exploitation of groundwater leading to lowered water tables in some areas, underutilization of existing water facilities, and inefficient water usage. Negligent development has led to the over-exploitation of groundwater resources and a significant decline in groundwater levels. Hence, there is a need to consider people's struggles for water resource management as the pursuit of human rights. The paper provides an analysis of government policies concerning water usage for households and agriculture. Also, to review the status of rural water supply and to assess its impact on people and agriculture in Bhor taluka, Maharashtra at present.

Keywords: national, policies, rural, state, and water

INTRODUCTION

All natural resources on Earth are essential for human existence, with water resources being particularly crucial. Water on Earth appears in various forms and shapes, influenced by human control, giving it the power to dominate and exploit as it pleases. While two-thirds of the world's surface is covered by water, less than 2.5% of this is freshwater suitable for human use and it is unevenly distributed across the globe. Moreover, per capita freshwater resources are shrinking more rapidly now than in previous decades. It is estimated that only an extremely small portion of the 1.36 billion cubic meters of global freshwater is available for use. (Ray, 2010)

India is increasingly being projected as an emergent economic superpower, based on the growth of its Gross Domestic Product. However, if the economic status of India is measured in terms of water status and the status of water rights,

India is quickly becoming one of the most underdeveloped countries in the world. There are serious concerns about the availability of freshwater, as India has 16% of the water's population but only 2.45% of the world's land resources and only 4% of the freshwater resources (Ray, 2010). The per capita availability of freshwater in the country has dropped from an acceptable 5,177 cubic meters in 1951 to an alarming 1,820 cubic meters in 2001(Ray, 2010). It is estimated that freshwater availability could further decline to 1,341 cubic meters by 2025 (Ray, 2010).

In a World Water Development report, India ranked 120 out of 122 countries when ranked for water quality and for the ability and commitment to improving water quality. With regards to water availability, India has been ranked a lowly 133rd out of 180 countries. The neighboring countries of India- Bangladesh, Nepal, Sri Lanka, and Pakistan, have fared better than India (Ray, 2010).[1] The current socioeconomic conditions in India have significant implications for the country's national freshwater policy. In 1997 the World Bank established that 44.2% of the population were living on less than $1 a day and 12% were living on $2 a day. This indicates that as the freshwater crisis deepens, a significant proportion of the population may not be in a position to pay for freshwater or have the capacity to influence policy favorably.

According to Vandana Shiva, "India's water crisis stems from neglecting India's ecology, hydrology, and water heritage. This crisis can only be addressed by rejuvenating our water culture and creating water democracy." For instance, Cherrapunji in northeast India has an annual rainfall of more than 9,000 millimeters, yet a couple of months after the rains, the region suffers from water shortages, mainly because, it is a reflection of the interrelationships between water, land, and human activities, both legal and illegal.

India's water policy is advanced chiefly through the structures of colonialism or post-colonial modes of Western development that ignored complex traditional aspects of Indian society by treating them as unscientific and backward. According to Binayak Ray, many political conflicts originate in water shortages or the desire to control water sources. Indian freshwater policy falls short in many courts. First, it fails to enlighten or raise the consciousness of most sections of the community on the fundamental nature of the problem. Second, it hardly recognizes the critical need to have a regional focus and action plan in collaboration with other countries, to ensure the uninterrupted flow of freshwater to India. Third, there is a clear lack of understanding at all levels of the administration.

The 21st century has seen a growing concern over water resources in recent years. Internationally, the environmental agenda, including the questions associated with climate change, is related to finding strategies for the sustainable management of water. In India, water is at the heart of politics between the nations as they increasingly face the challenge of meeting the growing needs of their populations. Nationally, states assert their ownership of water resources

[1] According to Binayak Ray, the South Asian countries have the largest concentrated of population living below the poverty line in the world, so their capacity to invest in modern technology to convert un-suable water to usable freshwater, and to pay for the processed water is limited. So, India, Pakistan, Bhutan, Bangladesh, Nepal and China, have to work together, cooperatively to ensure that available freshwater is used optically if their development efforts are to be sustained. Unfortunately, most of the countries do not have a sustained national freshwater policy at present.

and build empires of water that are inextricably linked with national identities and pride.[2] Thus, the domination of waters has been represented as 'one of the clearest illustrations of the link between the control of nature and control of people'. Households depending on agricultural occupation as an important source of income are extremely vulnerable when water quantities tumble or available water supplies become ineffectual. (Dutt, 2008).

The challenge India faces is not only who makes the decisions related to water but also what they are and how they are implemented. Instead of proposing integration or technical considerations, both of which are important, the deeper constitutional foundations on which day-to-day decisions and courses of action must be taken into consideration. Moreover, the core issue of water management in India is the question of water ownership. In India, for example, water is technically a state subject, but the states and the central government continue to assert their rights over water resources. While the central government continually tries to expand its roles, the states and the local governments try to carve these efforts down, giving rise to confusion. There is no doubt that water must be valued and indeed it is valued, appraised and assessed continuously (Dutt, 2008). Moreover, both the population of the region and food production have increased and so have the pressure on water supply. Although the use of groundwater has contributed significantly towards wealth creation in the rural sector and is essential for drinking water supplies, the entire economy has remained unpremeditated, private, and informal.

RESEARCH OBJECTIVE

A clear and specific objective helps guide the research process, including data collection, analysis, and interpretation, and enhances utilization. The purposes of the current study are as follows:

1. To identify and analyze government policies regarding water for households and agriculture.
2. To evaluate the gap between government policies implemented in the village and the local people.
3. To understand the impact of insufficient water on people and agriculture.
4. To review the status of rural water supply.

LITERATURE RIEVEW

Numerous in-depth studies have been undertaken from a sociological standpoint to examine the issue of water scarcity and the water policies that have been put in place in India, alongside their specific impact on the local communities. The most important works in the analysis of water resources and government policies have been those of Kuntala Dutt, K. J. Joy, M. Anwar Hossen, Philippe Cullet, and Sujith Koonan

[2] Control of water is and always has been based on cultural constructions of water. Dams, the classical symbols of water control and as such also the symbols for different types of political capital and moral authority. However, large-scale water projects have also ended up as symbols of failure, in ancient times as well as in ours.

According to Anwarul Abedin and Umma Habiba, water insecurity in terms of quality and quantity has been a major issue leading to local, national, and international conflicts. It has been seen that globally many people live in acute shortage of water. Furthermore, water insecurity through the scarcity of quality and quantity of water is an issue of major and critical concern in many parts of the world. In the realm of addressing water insecurity, the social dilemma has emerged as a relatively new area of focus. An illustrative situation involves the widespread understanding of the importance of reducing water consumption during droughts, juxtaposed with the individual temptation for households to continue watering their gardens. Through this example, a conflict of interests between the individual and the collective poses a serious dilemma, especially in the context of water, which is a growing social issue.

For Cullet and Koonan, water law is progressively becoming a central area of concern for most people with an interest in water. It is difficult to create a clear map of water law because it is made up of different legal instruments at both the state and federal levels. These instruments include those specifically designated as water law, as well as others usually associated with different areas of law, such as environmental law. There are also different types of relevant instruments, including statutes and administrative directives that regulate various aspects of water management, which are not addressed by separate legislation.

RESEARCH METHODOLOGY

This study employs a Qualitative research methodology to explore the intricacies of water policies and governance in Bhor Taluka, Pune District. The research design encompasses explanatory and descriptive elements, aiming to understand current practices and uncover underlying factors influencing water management outcomes.

Data Collection Methods:

The study employs a case study approach focused on Bhor Taluka to investigate local water governance practices. Data will be collected through semi-structured interviews with government officials, residents, and community leaders. This method ensures flexibility in questioning and addresses key topics such as policy implementation and community engagement in water management. Additionally, analysis of secondary sources including policy documents and relevant literature specific to Bhor Taluka will provide contextual background and complement insights from the interviews. Together, these approaches aim to comprehensively examine water governance dynamics and policy effectiveness in the region.

WATER POLICIES IN INDIA

In pre-British India, the management of water was a local matter and was in the hands of the community. Some rulers started taking an interest in water supply projects. Ponds were made available for cultivation and drinking purposes. So gradually water resource management went from community to state. The control of water management then passed into the hands of engineers and bureaucrats. The traditional method of water management went out of fashion and new methods for water management such as the construction of dams took place. Various irrigation canal and drainage Acts were passed before independence. North India Canal and Drainage Act, 1873 was passed, which stated that ‘the local

government is entitled to use and control for public purposes the water of all lakes and other natural collections of still water'. The Central Water Commission (CWC) set up in 1945 before independence was entitled to the responsibility of coordinating with the State Governments. Awareness programs for control, conservation, and utilization of water resources were the main tasks of CWC. After independence, multipurpose river projects were taken up all over the country. The Ministry of Water Research (MWR) was held to take responsibility for the formulation of policies, plans, and programs to manage the water resources.

National Water Policies in India

National water management policies are extremely important from legal and institutional perspectives as these reflect the direction of the government in the context of water resources planning and management. To ensure that these policies are acceptable and beneficial to all, the public consultation process plays an important role. Throughout the five-year plan, the Central Government introduced a variety of policies and programs to address the issue of drinking water in India.

➢ In 1949, the Environment Hygiene Committee was set up to recommend the provision of a safe drinking water supply to cover 90% of India's population in the coming 40 years.

➢ In 1950, the constitution of India gave ownership of all water resources to the government, specifying it as a state subject, giving citizens the right to drinking water.

➢ In the 1st Plan (1951-56), Water supply and sanitation were added to the national agenda with sanitation first time mentioned under water supply. The first National Water Supply and Sanitation Programme was launched in 1954 as a pact of health plan. Equal funding was provided by both, central and state governments.

➢ In the 2nd Plan (1956-61), the water supply sector was not given much priority in this plan, but funding was provided to Public Health Engineering Departments (PHED).

➢ In the 3rd Plan (1961-66), "Problem Villages"[3] were identified as those without drinking water sources within a distance of 1.6 km (in the plains) or an altitude of 100 m (in hill areas), those endemic to waterborne diseases, and those where water sources contain excess salinity, iron, fluoride, or toxic elements.

➢ In 1968, the states were given financial authority to sanction rural water supply schemes, which were expanded to include population units less than 20,000. Villages facing acute drinking water scarcity received top priority. The

[3] A Problem village was defined as one where no source of safe water is available, within a distance of 1.6 km or where is available at a depth more than 15m or water source has excess salinity, iron, fluorides and other toxic materials or where water is exposed to the risk of cholera or guinea worm.

National Rural Drinking Water Supply Program was initiated in 1969 with the United Nations International Children's Emergency Fund (UNICEF) technical assistance. During this phase, Rs 254.90 crore was utilized to dig 1.2 million bore wells and provide 17,000 piped water supply schemes.

➢ In 1981, India took part in the International Drinking Water Supply and Sanitation Decade (1981-1990) and formed a national-level apex committee to establish policies to ensure safe drinking water for all villages.

➢ During the year 1986, the Central Rural Sanitation Programme and National Technical Mission were launched. Also, the National Drinking Water Mission (NDWM) was launched to provide safe drinking water to all villages as well as it gave special attention to water supply to SCs and STs.

➢ In India, the first National Water Policy (NWP) was adopted in September 1987, since then several challenges and issues have come up in the development and management of the water resources. The NWP was reviewed and updated in 2002 by MWR, Government of India. This new updated policy had several positive as well as contentious elements that did not exist in earlier policy. But this policy too, does not go far enough in preparing the nation for the optimum management of water resources in the 21st century. Now Draft National Water Policy 2012 has been prepared by the Ministry of Agriculture, Government of India in consultation with the National Water Board (NWB) and National Water Resource Council (NWRC).[4]

➢ In 1992, the 74th Constitutional Amendment Act was passed to establish Urban Local Bodies (ULBs) known as Municipal Corporations, Municipal Councils, and Nagar Panchayats based on the population of each recognized urban area in the country.

➢ In 1994, Panchayati Raj Institutions were assigned the responsibility of providing drinking water as per the provisions of the 73rd Constitutional Amendment.

➢ In 2005, the Bharat Nirman Programme (BNP), a five-year program to build rural infrastructure, of which drinking water supply was one of the six components. The target was to provide every habitation with a safe source of drinking water.

[4] It is claimed that noticeable changes have been made in NWP 2012, as previous water policies of 1987 and 2002 were designed by the government in consultation with few experts, but this policy was put in the public domain to enlist the suggestions from a wide spectrum.

➢ In the 11th Plan (2007-12), was to cover 63 cities and 5098 towns to be covered under the JNNURM[5] and UIDSSMT[6] programs, to provide adequate drinking water to the people.

Thus, each policy was considered as an effort to improve the previous policies to meet the contemporary challenges and to apply modern technology and management techniques to manage the country's water resources. However, there are still many issues on which there is no unanimity among the professionals and few open-ended questions still exist.

State Water Policies in India

The State Water Policy (SWP) was first adopted in May 1997 on the lines of NWP 1987. Given the vital importance of water for human and animal life, for maintaining ecological balance, and for economic and developmental activities of all kinds, considering its increasing scarcity, the planning and management of water resources, has become of the utmost urgency. So far, the SWP has been finalized and adopted by 12 States namely Andhra Pradesh, Chhattisgarh, Goa, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Punjab, and Uttar Pradesh. The formulation of SWP is in progress in other states. The objective of the Maharashtra State Water Policy is to ensure the sustainable development and optimal use and management of the State's water resources to provide the greatest economic and social benefits for the people of the state of Maharashtra in a manner that maintains important ecological values within rivers and adjoining lands. The state provides adequate water facilities for domestic, industrial, and agricultural use in both, rural and urban areas. The community will be effectively involved in the planning and management of drinking water supply and sanitation facilities in urban as well as rural areas.

➢ Maharashtra State Water Policy was introduced in the year 2003 to provide sufficient water to both rural and urban areas. It also places special attention on the groundwater facilities and the quality of water.

➢ The Maharashtra Ground Water (Development and Management) Act, was passed in 2009, to have a periodical reassessment on a scientific basis of the groundwater potential taking into consideration the quality of the water available and economic viability.

➢ Maharashtra Management of Irrigation Systems, was introduced by the Farmers Act 2005, in which farmers' participation in irrigation management should be made mandatory and water will be supplied on the volumetric basis to water users association only.

[5] It is claimed that noticeable changes have been made in NWP 2012, as previous water policies of 1987 and 2002 were designed by the government in consultation with few experts, but this policy was put in the public domain to enlist the suggestions from a wide spectrum.

[6] Urban Infrastructure Development Scheme for Small & Medium Towns (UIDSSMT) subsumed the existing schemes of Integrated Development of Small and Medium Towns

➢ The Department of Drinking Water Supply (DDWS) in the Ministry of Rural Development is the nodal department in the Government of India for providing scientific, technical, and financial assistance to the States in the drinking water and sanitation sector.

Water management in India passed through various rulers, bureaucrats, engineers, etc. and many drinking water supply plans, policies, and programs were launched to manage the scarce natural resource. However, the government has failed to operationalize these policies because of the prevalence of various contentious issues in these policies.

RURAL WATER SUPPLY FOR HOUSEHOLDS AND AGRICULTURE IN BHOR TALUKA AND MAHUDE KHURD VILLAGES

Water is essential for all life. It serves as a crucial input for all social and economic activities that humans engage in, including human health, food production, sanitation, energy production, and the manufacturing of various goods and services. However, in the 21st century, one of the major challenges for society is to cope with a growing mismatch between the demands for and supply of freshwater. In developing countries, fundamental issues of the social sector are gaining prominence. Basic needs, particularly those of the rural poor, continue to attract the attention of planners and policymakers. The provision of potable water to the rural masses is a case in point. This is important because access to safe water has a direct bearing on the health of the poor, particularly the rural poor. Despite the concerted efforts of both the Central and States, right from the First Five Year Plan, nearly 20% of the population has hardly any access to safe water. The allocation for water supply and sanitation was 2.47% in the First Five Year Plan, of which only 0.71% was earmarked for rural water supply. The allocation rose to 3.85% in the Eight Plan, of which 2.52% was allotted to rural water supply. However, in terms of the per capita cost of plan outlay towards the rural water sector, it was abysmally low during the early plan period. It increased five-fold between the Fifth and Sixth Plan periods. The provision of drinking water to villages is a State subject under the Indian Constitution. Under this policy, villages nationwide were divided into habitations, each of which was to be equipped with at least one source of safe drinking water, such as a hand pump, stand post, or tap connection.

The paradox of ‘scarcity amid plenty’ applies to rural water supply. In most cases, it is not a lack of water but improper and inequitable distribution of water among consumers. Water, after all, has no substitute, unlike other items such as oil and coal. The environmental problems associated with rural water supply have received scant attention. The quality of water is just as crucial as the quantity of water. The depletion of groundwater is a serious issue in India. This being a common property resource, any reduction in the water table would jeopardize the access of the poor and aggravate existing problems. In most parts of the country, groundwater exploitation is as high as 80%. Further, there is not enough water globally for all the things humans need and want water to do for us. With increasing climate variability, there is insufficient water available even in water-rich regions. Abundant water is not only essential to the photosynthetic process by which plants manufacture the carbohydrates that are the foundation of our food supply but it is also an important structural element in our food products.

Water is an important input in agriculture and it plays a central role in the panoply of assets, resources, and institutional arrangements that farmers need to sustain production. The use of water in agriculture makes production possible, like the growing of fruits, vegetables, pulses, and grains. A reduction in applied water may lead to decreased production and yield. Implementing management strategies is crucial to enhance agricultural water use and sustain optimal production and yield. According to the International Water Management Institute, agriculture which accounts for about 70% of global water withdrawals, is constantly competing with domestic, industrial, and environmental uses for a scarce water supply. Poor water quality can impact the quality of food crops, leading to illness in those who consume them. For instance, the water may contain germs that cause human disease. These water challenges are expected to strongly impact agriculture, undermining the productivity of rain-fed and irrigated crops and livestock activities particularly in certain regions. Thus, the challenges that lie ahead are both extremely complex and locally diverse.

Case study 1

A housewife and farmer from the village, emphasizes that agriculture in Bhor is primarily reliant on the monsoon. People are unemployed in the off-season. In case of low rainfall, people suffer as their only hope of earning during the monsoon is damaged. If rainfall is delayed, the cultivation of crops is also delayed. The cycle of delayed rainfall can result in soil erosion, damage to fertile land due to insects, and destruction of crops due to weather changes. Even though the government provides subsidies and compensates for farmers' losses, not everyone receives the support. While the local government does provide drinking water facilities, water shortage is still a significant concern during the summer. People living near the river source experience fewer water shortage problems, while those farther away suffer from more severe water scarcity. Water leakage is a significant issue contributing to the water shortage, and despite filing complaints, it has not been adequately addressed. Additionally, the water supply during the rainy season is not sufficient. The drinking water supplied is dirty, which leads to the ill health of the rural people. Complaints were lodged at the Nagar Palika, but not many steps were taken because the water itself was so polluted that the government couldn’t do anything. However, there has been considerable progress as many water policies have been implemented in the village, which solved their drinking water problem. Additionally, tap water is provided to every house in Bhor village. Moreover, most rural people are unaware of water policies, preventing them from benefiting. Additionally, individuals are generally not highly motivated to educate themselves about government policies, schemes, or laws, as their primary focus is on providing for the needs of their families and making a living.

Case study 2

A housewife and teacher from the village, has mentioned that the water supply in Mahude Khurd relies on groundwater from a well. Water is provided daily for household use, but issues arise during the summer because of excessive groundwater extraction. Water shortage increases due to pipeline leaks and population growth, leading to a decline in drinking water supply. Additionally, poor water quality requires people to take extra care in filtering and using water responsibly. The gram Sabha has been requested to provide a net to cover the well in order to prevent animals from getting inside, ensuring the safety of the people. In the past, an animal was found dead in the well, and the water from it was used for drinking, which resulted in the ill health of the people of Mahude Khurd. This raise concerns not only

about the availability of water but also about its quality and safety. Recently, a water pipeline has been installed in the village to provide daily water to the villagers. There is a need to fit a water filter, and also to spread awareness about the proper usage and conservation of water. Unfortunately, the government is not taking any initiative in this regard. The school in Mahude Khurd is also facing a water shortage. Students do not have access to proper drinking water facilities and there is a lack of sanitation. The school does not have a water tank, so the primary school students have to bring drinking water from their homes. However, there is also a shortage of water for toilet use. Additionally, the water used for cooking the mid-day meals provided by the government is not very safe. As a result, rural children are encountering water and sanitation challenges.

Case study 3

The villagers have noticed that water availability in Mahude Khurd has improved significantly in recent times. The water issue is a key topic of discussion in every Gram Sabha meeting. The active involvement of women in the Gram Sabha is greatly appreciated, as their perspectives and contributions are essential in shaping decisions related to water management and other water-related issues. The collaborative support of all members further strengthens the community's ability to effectively address and manage water-related matters. All the people have equal access to water facilities. However, some members of the village who live on the mountaintops face challenges with water supply. Certain schemes have been implemented to provide water pipelines, to regulate water supply to ensure the well-being of the people. This has helped in ensuring consistent access to water for them. Farmers encounter a significant challenge in the form of inadequate water supply for their agricultural activities. The cultivation of crops relies heavily on water, with few alternative sources available for irrigation aside from the monsoon season. Pipelines and related infrastructure maintenance can be challenging and time-consuming. The time it takes to resolve these issues depends on the specific situation. The Water Policy and Sanitation Committee is responsible for addressing local grievances, overseeing water supply construction projects, and conducting thorough surveys.

WATER AND RURAL COMMUNITY: POLICIES, PERFORMANCE AND CHANGE IN MAHUDE KHURD VILLAGE

As the head of the water committee, a dedicated member worked tirelessly to improve the village community of Mahude Khurd. 62 years ago, the villagers experienced severe water shortages with no access to water facilities. They had to walk 2 km every day to collect water from the pond as there was no water supply and even struggled to provide water for their animals. Due to the circumstances, women were unable to wash their clothes daily and had to wait 4-5 days before being able to do so.

In Mahude Khurd village, there were only a handful of wells located some distance away, which supplied drinking water to both the local people and the animals. However, the water levels in these wells began to decrease significantly, as the availability of groundwater dwindled due to the high temperatures and increased evaporation. In order to meet the water needs of the village for both household use and agriculture, the villagers gathered contributions from those who were able to provide them. They endeavoured to construct a water tank that would adequately satisfy the daily

water requirements of the entire community. The tank was filled with water drawn from a small natural source located on the mountain hill. In a display of proactive leadership, members of the Gram Panchayat took the lead in ensuring a sustainable water supply for the residents of Mahude Khurd.

In the past, the water tank served as a vital resource for villagers, ensuring a consistent water supply for everyone. However, due to the decreasing groundwater levels and drying land, the amount of water available for the villagers has also decreased. The situation became so severe that there was not even half an inch of water left in the tank to provide drinking water for the people. When the situation worsened, efforts were made to seek government assistance to provide drinking water to the villagers. Efforts began in 2002 to implement water policies and schemes in the village. Over time, three water policies and schemes were successfully implemented for the village's development.

Drinking water supply is a state matter, and the Government of India supports state efforts with necessary financial and technical assistance. The initial initiative, sanctioned by the Zilla Parishad under the Accelerated Rural Drinking Water Supply Scheme, received a fund of 36 lakhs rupees. The allocated funds were utilized for excavating land to construct a well, intended to cater to the water needs of the local populace. However, this solution yielded temporary relief, serving the community for only 4-5 years. With the gradual depletion of groundwater, the water supply dwindled, resulting in inadequate water availability for the residents. Consequently, it became imperative to devise an alternative scheme to address the pressing water scarcity issue.

The government introduced policies that helped rural people make use of them. The Maharashtra Water Policy provided funds for local people to address water scarcity in their villages. In 2009, a new scheme was implemented to provide water to all village houses. Water was transported from a pump motor located 5 km away, drawing water from Bhatghar Lake to Mahude Khurd village. In the year 2016-17, a significant scheme was initiated with the support of the Zilla Parishad, involving a fund of 49 lakhs rupees. Before the commencement of the scheme, a comprehensive survey was conducted to ensure it would meet the needs of the villagers. The project entailed supplying water from the Veer Dam which had been serving the community for 95 years. Additionally, tap water was made available to every household in the village, marking a substantial improvement in the accessibility of clean water. This new arrangement enabled the villagers to access water daily, meeting the needs of both households and livestock.

The water schemes, although they provided sufficient water to the villagers after a long struggle, failed to deliver safe drinking water. The quality of the water provided was not good, so the villagers had to boil it every day. Even though the water has been filtered from the main source, its quality, and safety are in doubt due to pollution of the river and the risk associated with water supplied through underground pipelines. Previously, farmers also faced challenges in cultivating their land due to insufficient water. They had to purchase water from tankers to irrigate their fields, but this water was only available every other day. Thus, the animals working in the field also suffered due to water shortage. The farmers had to pay 50-60 Rs for 200 litters of water every time. The animals working in the field also suffered due to water shortage. The farmers had to pay 50-60 Rs for 200 litters of water every time. Although they tried to dig wells

to provide water to the fields, the groundwater was getting scarce, and they did not have any nearby water resources to solve their water issues.[7]

Indiscriminate exploitation of groundwater has created a problem of steadily falling water tables, especially in the agriculturally important regions. The farmers were only able to cultivate land during monsoon season as direct rainwater was available to them. Farming in the region of Mahude Khurd and the surrounding villages was a seasonal activity, as it could only take place once a year, specifically during the period from June to September.

If there is insufficient rainfall in any situation, farmers have to face significant problems. However, if they have access to water sources, they can double their crop production, which can contribute to the development of not only their family but also the entire village. Although the Bhatghar Dam is in the opposite direction of Mahude Khurd, irrigation facilities such as a canal could not help farmers, as the Mahude Khurd village is located in a hilly region. In Mahude Khurd, the implementation of the Maharashtra State Water Policy led to the initiation of water conservation measures. These efforts focused on the preservation, regulation, and enhancement of surface water resources. While these steps successfully ensured a modest and consistent water supply over a limited period, long-term water conservation proved unattainable due to various challenges. Consequently, while the concept of water conservation holds significant promise for sustainable water development in the village, its practical implementation is currently hindered.

Government policies play a vital role in the development of villages, but they can be slow to implement. If private sectors were involved, progress could be faster. There are several approval procedures such as permissions, grants, tender procedures, contractors, and local politics. However, the most crucial aspect is obtaining consent from the villagers. Without their approval, policy implementation would be impossible. In this case, the villagers supported the policy as they recognized the need for water. Even women actively participated in the implementation process.

The women actively participated in the water committee, playing a crucial role in disseminating important information about various schemes and policies to the villagers. A prominent member of the water committee took the initiative to educate the villagers about the implementation of specific schemes designed to address the persistent water scarcity issue in the village. Ensuring the proper implementation and maintenance of water policies is imperative. Unfortunately, the government has overlooked this matter. For example, despite the installation of water pipelines underground, there is a lack of regular inspection, resulting in the corrosion of some pipelines. Consequently, the rusted pipelines obstruct the residents from accessing a reliable water supply. As a result of the government's negligence, there is a repeated need for new water policy schemes, exacerbating the challenges faced by the villagers. Moreover, the ongoing issues have led to a substantial increase in maintenance costs, further complicating the situation.

The water supply situation in Mahude Khurd is satisfactory in terms of coverage at habitations and service at households. This reform process has led to improved water and sanitation services in rural areas. There have been significant improvements in household-level access to piped water supply in the village. However, there is still a lot of

[7] The reason behind the ground water getting scarce is that the land is of solid rocks and not of fractured rocks. Thus, the water which should be collected from the rain into the land is not possible. Thus, due to lack of groundwater availability, the farmers are facing drought situation.

room for improvement. It's also important to consider the existing water scarcity in the region to ensure the long-term sustainability of the schemes.

CONCLUSION

In India, around 44 million people are affected by water quality issues, and the availability of water is a major problem, especially in rural areas. Despite being one of the wettest countries, the per capita availability of water is expected to be half of what it was in 1947. Major initiatives are required to ensure efficient, socially equitable, and environmentally sustainable management of water resources. Even 50 years after independence, nearly 20% of the rural population still has little access to safe drinking water. The lack of finance for the operation and maintenance of water sources is a major challenge, reflecting the inefficiency of the states in mobilizing funds for this purpose. Water harvesting can bring many benefits, including increasing water availability and reducing the pressure on the state to provide all the financial resources needed for water supply. Involving communities and households in water projects will give them greater ownership and responsibility, reducing misuse of government funds.

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