



Task Force 6
Accelerating SDGs: Exploring New
Pathways to the 2030 Agenda



STRENGTHENING WATER SECURITY IN TRIBAL HABITATIONS THROUGH CONSERVATION MEASURES

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Abstract




Various government initiatives aim to realise water security and conservation for sustainable development and equity. The Government of India's Jal Jeevan Mission (JJM), for example, in line with the global 'Sustainable Development Goal (SDG): 6', is targeting the water security of individuals in the last mile of service delivery. JJM recognises water security in terms of sustainable and adequate water quantity and quality. This Policy Brief


highlights the innovative interventions in the Palghar district of Maharashtra that aim to address water scarcity problems in tribal habitations. It offers evidence-based recommendations for G20 members regarding how such low-cost approach to water conservation can be envisioned that can contribute to improving human health and sustainable development by reducing coping costs and drudgery associated with water collection.



The Challenge



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Water crises represent a multidimensional and complex problem that needs to be dealt with through global and collective efforts. This Policy Brief studies the case of Palghar in the Indian state of Maharashtra, where best practices aim to mitigate the challenge of water scarcity in tribal habitations. The innovative intervention involving the use of ‘Prefabricated Zincolume Tanks,’ has helped solve the water scarcity problem of the tanker-fed habitations in the villages through conservation measures. It is emerging as a sustainable solution to providing drinking water security to the scarcity-affected remote habitations as water stored in these rain-harvesting tanks is utilised during the summer. These tanks have made habitations tanker-free and ensured their drinking water security throughout the year. This low-cost approach to water conservation facilitates access to safe drinking water for the communities, contributing to improving human health.

Domestic and drinking water scarcity problems in the tribal blocks of Jawhar and Mokhada of the Palghar district of Maharashtra were long-standing.

The key reasons for water stress¹ are documented by several studies (Belsare 2012; Groundwater Surveys and Development Agency (GSDA) 2013; Aroehan 2018). These include a lack of adequate groundwater recharge because of hilly terrains with steep slopes and the presence of hard (basalt) rock formations. Due to these problems, water storage is difficult despite having good rainfall in these areas (Aroehan; GSDA 2018). Therefore, historically, these blocks were experiencing acute water scarcity beginning in March of every year.

To alleviate the problem, governments in the past years have initiated projects related to water supply and conservation. However, they failed to create sustainable solutions to the water scarcity problems mainly because of the poor recharging conditions in the region. NGOs have also constructed traditional water-conserving structures in these areas, including check dams, cordons, wells, ponds, sub-surface bunds, and farm ponds. However, these structures still did not ensure the availability and accessibility of drinking water. As the wells and other water bodies in the village dry up, the communities are left



to depend either on distant sources of water or government tankers (Jamwal 2017).


As per a GSDA note, water scarcity in the small and remote habitations of Jawhar and Mokhada prevailed for a period of more than three months (90-100 days). These habitations are difficult to access by road during the monsoon and post-monsoon periods. There are no facilities for adequate potable drinking water in the absence of both surface and groundwater, and these habitations suffer acute drinking water shortages every year. Therefore, the government-supplied tankers largely met the population's water needs in the summer months (GSDA 2018).

This was a temporary solution, however, and every year the problem emerges. Some villagers also often have to dig pits to find water and travel to the surrounding villages, but they succeed in accessing only small amounts of water. These challenges have had consequences on people's hygiene and health (Jamwal 2017).

Rainwater Harvesting through Low-Cost Interventions

To address the water scarcity challenges, the rural water supply department of the Zilla Parishad (ZP), Palghar, intervened in 2018. It installed 'prefabricated zincalume tanks' in the 17 tribal habitations of the Jawhar and Mokhada blocks. The rainwater conservation tanks have a capacity of 0.1 to 0.2 million litres and are installed in habitations with a population of less than 100. Because of the low population in these habitations, they were not eligible for individual water supply schemes. Additionally, expensive water supply schemes involving huge capital costs as well as operation and maintenance (O and M) costs are not affordable.

The total expenditure incurred on installing tanks was US\$305,041.54. The annual expenditure on the 10 tankers (required for the 17 habitations) is US\$51,378.37. For 30 years of the project life cycle, the cost would be US\$1.54 million. (Explanatory Note ZP) Therefore, this intervention saves a significant amount of cost to be incurred on tankers.



Every year the rainwater is conserved in these tanks, and community members of the tribal habitation access the conserved water for drinking. The water is supplied from March to May as per the designed norms of 20 lpcd.


Rationale for Interventions

The option of tanks was suggested as an outcome of the detailed investigations and study by the GSDA. If the surface storage option is used, it will be subjected to evaporation losses. The sub-surface geological characteristics of the aquifer are not favourable for the infiltration of rainwater and recharge to the subsurface. Therefore, implementation of other conventional water conservation measures is thought to be of limited use except when used for afforestation. As compared to the available rainwater resource, the need for domestic and drinking water and total water requirement is negligible. Thus, the remedial measures to solve the shortfall of domestic and drinking water can be met by adopting rainwater harvesting and available water management with people's active participation and involvement. This will save the recurring expenditure on tanker supply. It is to be mentioned specifically that the

pipe water supply is unaffordable due to the non-availability of sustainable sources within a radius of about 3.00 km. Therefore, in this backdrop, the installation of a rain harvesting tank is a sustainable option.

Impact of the Interventions

This intervention outcome in the region can be judged by comparing the previous situation regarding the number of tankers and the reduction of the women's drudgery associated with water collection. Tribal habitations were practising the traditional approaches to conserving water in the region before this intervention. The tribal communities' traditional approaches to ensuring water security were mainly based on the availability of sustainable storage structures, which cannot meet the population's water supply demand. Water has thus become timely and spatially accessible following the installation of the tanks, even during extreme scarcity. The Tanker Report 2017–2019 also showed that some tribal habitations, including Jambhulipada, Kakadpada, Wanganpada, and Vanachiwada, had stopped receiving tankers. Officials of the ZP mentioned that these habitations became tanker-free habitations just



after the year of intervention, while the duration of tankers for some other habitations was shortened. This was the immediate positive outcome of the intervention.

Several reports and news highlighted the women's and girls' drudgery associated with the water collection (UNICEF 2016; Singh 2020; Kshirsagar 2023). They must visit distant locations about two to three kilometres during periods of acute scarcity. One of the ZP officials said women and girls must spend more than three hours fetching water for their households. This time cost of securing water was saved after the installation of tanks. This can be understood in terms of human development indicators (HDI) as well. Overall, this approach is sustainable and eco-friendly as we compare providing water to these hamlets by tanker and the more innovative, prefabricated zincalume tanks.

Therefore, this location-specific intervention provides a way to understand the overall well-being of the tribal habitations in their natural settings without affecting their cultural identity, customs, and practices. This also shows India's integrated approach towards tribal communities' overall

well-being that was depicted through several tribal policy initiatives such as the Panchayat Extension of Scheduled Area Act (PESA), 1996, Tribal Sub-Plan (TSP), which revised to Scheduled Tribe Component (STC). The funding was provided under Special Central Assistance to Tribal Sub Scheme (SCA to TSS), Grants-in-aid under the provision to Article 275 (1) of the Constitution of India (Ministry of Tribal Affairs).


The present JJM programme explicitly recognised the needs of the tribal habitations and hamlets. The Functional Household Tap Connections (FHTC) in these areas are provided through solar energy-based stand-alone water supply systems for scattered/ isolated/ tribal villages. The JJM guidelines also provided for the in-village infrastructure through the grants under article 275 (1) of the Constitution/ Tribal Sub Scheme (TSS) (JJM 2020). For effective implementation of these efforts, the 2023-24 budgetary allocation shows the increase in overall outlay for the Ministry of Tribal Affairs (PIB 2023). The Department of Water and Sanitation's total percentage of the STC is 9.10, which is significant. These facts show the Indian government's commitment to tribal welfare with a focus on providing water security.



The G20's Role

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The G20 put particular emphasis on the sustainable use of natural resources with a focus on water in 2017, but it rarely takes into account and frequently overlooks the safe and clean drinking water needs of tribal communities. The G20 nations are home to 4-5 per cent of the G20's population and 70-75 per cent of the world's tribal people (Sasidhar 2023). In addition to their struggle for identity, tribal communities are dealing with existential problems brought on by water scarcity due to urbanisation, industrialisation, and climate change. Although tribal well-being is an important driver of the Global South, certain countries have yet to recognise these ethnic communities fully. Even though the G20 has matched its priorities and initiatives with the SDGs, it is the national governments' responsibility to carry out these objectives. India, as G20 president, must commit to the protection of tribal communities' cultures, customs, and traditions, with a special focus on access to water resources.

One of India's thematic priorities for G20 highlights the theme of 'Accelerating progress on Sustainable Development Goals (SDGs).' India is

committed to achieving the targets set out in the 2030 Agenda for Sustainable Development, focusing on providing access to Functional Household Tap Connections (FHTCs) to all rural habitats through Jal Jeevan Mission (JJM). In addition to the JJM, the 'Jal Shakti Abhiyan: Catch the Rain' (JSA: CTR) with the theme "Catch the Rain - Where it Falls When it Falls". This campaign, one of the key focused interventions, addresses water insecurity through rainwater harvesting and water conservation. India's pragmatic approach is linking local, national, and global priorities and developing opportunities for global solutions. Based on the best practices in the tribal habitations, this brief proposes an overview of water security and conservation measures to strengthen India's endeavour to achieve SDG targets.


India's G20 presidency acts as a platform for a joint understanding of global problems of water scarcity and insecurity of tribal populations. It helps build consensus among G20 members on the possible cross-contextual innovative solutions for tackling water stress and insecurity through conservation measures and knowledge exchange, including possible low-cost interventions and funding options.



Recommendations to the G20

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Based on India's experience of policy intervention in the tribal habitations, this brief shares an example of 'best practice' for tribal communities to foster sustainable and resilient water management through community-based conservation measures.

1) Innovative Interventions to Support the Tribals' Traditional Approach to Rainwater Harvesting

The intervention described in this brief is unique in terms of saving, conserving and utilising water for drinking. This intervention enhances the tribal communities' approach to sustainable development by protecting their collective customary and traditional water harvesting practices by provisioning the tanks. Saving water is not just about conservation but ensuring the availability of enough clean potable water at any given time and place to meet the populations' needs (Kumar 2023). Therefore, this region-specific tank intervention contributes to and accelerates India's progress towards achieving United Nations SDG 6.1 ('Achieve access to safe and affordable drinking water').

India's G20 presidency serves as an effective knowledge-sharing and action-oriented global governing platform showcasing best practices to G20 to facilitate the implementation of the SDG targets. These region-specific pragmatic solutions could apply to the on-ground challenges of the G20 member countries. At the same time, their expertise and technological knowledge sharing will help achieve the SDG goals of universal access to water.

Formulating an effective action plan for achieving the 2030 SDG Agenda will be of utmost priority for India's presidency. India and the other G20 members can exert influence in accelerating the scale-up of sustainable finance to achieve the SDGs' broader scope and climate targets. Even the UN Secretary-General stressed the importance of financing and other support mechanisms in implementing the global goals for sustainable development and climate action, urging further efforts by G20 countries to fulfil their commitments.

2) Linking Sustainable Development Goals with Human Development Indicators

Understanding the possible linkages of local interventions to the diverse contexts of the G20 countries, ample scope exists to empirically link the SDGs' achievements with the HDIs to better understand the interventions' on-ground impact better. This brief recommends that the G20 Data for Development Working Group (DWG) and Sustainability Working Group on Energy and Climate establish evidence-based relations between the SDG targets and HDIs to understand the overall impact of development in the G20 countries. There are two aspects to data for SDGS – Identification & measurement of issues & gaps; and partnerships & innovative solutions built on data (Kumari 2022). Additionally, the W20 (Women 20) should recognise the tribal women's empowerment through the intervention by making water available in their areas. From the

reduction of the drudgery associated with fetching water, they should advocate the tribal 'Women-Led Development', which is also based on the 'Water-Led Development.

Being a valuable approach Learning and Action Alliance (LAA) framework has been used for generating effective coalitions and partnerships among G20 nations. The innovative solutions that emerged through the 'transfer' of knowledge from these partnerships help to address the collective problems of the tribal communities of the G20. As the dialogues for policies and programmes were framed at the global, national, and sub-national levels, their implementation success requires social learning from the cross-contextual experiences of the G20 nations. The LAA framework enables effective stakeholder engagement among G20 nations, followed by collaborative action.

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Endnotes

- 1 “According to the UN, an area experiences water stress when annual water supplies drop below 1,700 cu m per person. When annual water supplies drop below 1,000 cu m per person, the population faces water scarcity, and below 500 cu m ‘absolute scarcity” (Aroehan)



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