

Can Jalyukt Shivar Abhiyan Prevent Drought in Maharashtra?

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Despite intensive implementation of the Jalyukt Shivar Abhiyan, many districts of Maharashtra are reeling under severe drought. This raises questions over the usefulness of the JSA in drought-proofing, especially in the way it is being implemented.

“Water for all—drought-free Maharashtra 2019” reads the title of the government resolution of the flagship programme Jalyukt Shivar Abhiyan (JSA), started in 2015, the year Maharashtra was facing yet another drought after a severe one in 2012–13. In 2015–16, 138 talukas were declared as drought-affected. Since the inception of the JSA to date, 2,54,000 water and soil conservation projects have been implemented in 16,522 villages in the state spending ₹7,692 crore. The JSA claims to have created 24,000 million cubic feet of water storage (Jitendra 2019). JSA works have also been implemented through Corporate Social Responsibility (CSR) funds, non-profit organisations and through competitions such as the Water Cup organised by Paani Foundation in order to create mass awareness about drought mitigation through people’s participation and work. So, why is it that more than 151 talukas were declared drought-hit in 2018–19 after five years of intensive drought mitigation efforts through the JSA?

Water scarcity is rising alarmingly in the state, especially in Marathwada. The government’s own data, as reported in the media, shows, to date, that about 4,920 villages and 10,506 hamlets are now completely dependent on water tankers for drinking water. Just within a week’s time, from 20 May to 27 May, the count of the number of parched villages went up from 4,615 to 4,920. Currently, there are 6,209 tankers deployed crossing the record of 6,000 tankers in 2016 (Ashar 2019). Chinchondi village in Pathardi taluka of Ahmednagar district is one such example where the JSA has been intensively implemented and it also won the second prize under the Water Cup competition in 2016. Yet this year the people of this village are spending

₹6,600 per day for a supply of 30,000 litres of water. Why is it that even after creating 24,000 million cubic feet of storage, drinking water for the people cannot be assured?

No Rain, No Gain

One common response by farmers and government officials to our question of the usefulness of the JSA was, “Pausach padla nahi tar kay karnar” (what can be done if it did not rain at all)? But, according to the Joseph Committee report,¹ “JSA was proposed as an immediate measure to address the recurrent problem of water scarcity and crop failures arising *due to low rainfall*.” If normal rain is seen as the precondition for the success of JSA projects, then the utility of the structures would be seen only during the periods of good rainfall. Hence, the JSA, or the way it is implemented, cannot be termed as a “strategy” to “drought-proof Maharashtra” because the structures will not be able to capture and sustain water during the periods of scanty rainfall. In fact, during the periods of good rainfall, most of the water is utilised to maximise the yields due to which negligible water is left, especially in the aquifers, to face a drought year. During good rainfall years, farmers are opting for extensive sugar cane cultivation, and there is no monitoring on the water consumption and planning for water-scarce years. Also, there is very little attention paid to improving the water-holding capacity of the soil so that the improved soil moisture can take care of the dry periods.

Jalyukt Shivar: A Quick Fix?

From our field investigations, we have observed that most of the projects have been created as quick-fix solutions without any long-term planning and water use regulation. One of the important steps while implementing works under the JSA is to prepare a detailed project report (DPR) for the village, which includes water budget and treatment maps. They need to be approved by the gram sabha. However, DPRs were neither available at the gram panchayat office nor at the government

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offices. Moreover, discussions with villagers revealed that most of them were not aware about the scheme and the process of implementation. Awareness about the JSA and participation of the people were found to be poor.

Physical and structural assessment works done under the JSA show poor quality of construction of many of the works, especially the cement nala bunds (CNBs). Many of the CNBs assessed had leakages, loose foundation with the main body of the structures either corroding badly or in some cases broken, exposing the rebars. With poor design of the flank and wing walls, scouring was observed on most of the banks near the the flank walls. Take the case of Jawale village in Jamkhed taluka of Ahmednagar district. A 5.5 kilometre stretch of a stream has 12 structures—nine new ones constructed under JSA and three old ones. Instead of repairing the old structures, new CNBs of very poor quality were constructed, thus not only making the old structures redundant but also leading to overdesigning as the average rainfall is only about 500 millimetre in a year. At some sites where deepening work was carried out, sand layers had also been removed. The excavated material was dumped along the banks without compacting and stabilising the banks.

An interesting observation made in Jawale village was that while the local stream called Nandani was deepened in the upstream areas, right near the main village, construction debris was dumped into the stream bed, which completely negated the alleged purpose of river deepening. Land treatments such as compartment-bunding have extensively been carried out. But, it was observed that a number of villagers tended to refill the trenches to maximise the land under cultivation. Good practices developed as part of watershed management in the state are missing in both design and implementation of JSA. Field observations and discussions with villagers show that there is very little oversee by the community over construction done by the contractors. There are also no institutional arrangements around the repairs and maintenance of these structures.

The farmers are not only facing shortages of water for their crops and cattle, but also have to struggle for meeting their basic domestic water needs. Some villages like Chinchondi and Kharda have access to piped water systems, where water is supplied after a gap of 5–10 days. Where piped water systems are missing, villagers are supplied drinking and domestic water through government or private tankers. In Chinchondi village families are seen spending, on an average, ₹3,000 to ₹6,000 per month only on purchasing drinking water.

Ongoing Drought

Many farmers sowed in the kharif season. However, the crops failed due to lack of water. Those having access to borewells/dug wells and farm ponds, to some extent, were able to grow crops. Some farmers, especially orchard owners, were seen spending their savings—a few families reported spending even up to ₹40,000—in buying tanker water in order to protect their crops. In Kharda, many lemon plantations have simply dried up, as farmers were not able to purchase water.

In the current drought, no work is available in the village under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) as most of the work under the JSA has been done through machines, replacing manual labour. Marathwada is known for high landlessness as about 30% of the people are landless. People are forced to migrate to towns/cities where work is available. Those who do not have the option to migrate, have simply stayed at home, and have sold their livestock or taken loans to survive drought. Many villagers were also seen investing in secondary occupations, like dairy, opening small grocery shops/hotels, driving, etc, to survive the drought.

More than 40% of the area in the state is drought-prone and these regions experience a drought situation once in every four to five years and the frequency has been increasing recently. Many water and soil conservation schemes have been implemented for decades, but the drought condition has been only worsening every year. The main issue with these drought mitigation measures is that they are only supply-side solutions,

and usually forgotten in good rainfall years. Participatory planning, accountability, understanding the hydrological limitations, sustainability, regulation of use, equitable access and better agromonomical practices—broadly known as demand management options—are some of the missing aspects in the current drought mitigation measures.

Water Management at Basin Scale

One important insight from Kharda village (Ahmednagar district) was that in spite of spending huge amount of money under JSA, the village is to receive water from a newly constructed minor irrigation scheme called “Amrut-link” by 2020, which would increase the irrigated area in the village. There are many such irrigation projects that are in the pipeline or at various stages of development in the state. So how does the money spent on implementing JSA get justified if villages like Kharda almost end up completely relying on exogenous water? Or why is it that works taken up under JSA and other water sources like minor and medium irrigation projects do not get integrated as part of a sub-basin or basin plan?

The problem here is of creating local water storages and simultaneously sourcing water from larger units/scales without understanding the partitioning of water at the basin scale. Water is not lost at the basin scale. If a basin receives a certain amount of rainfall, after the evaporation losses, the water in the basin remains in the soil as moisture used by plants directly recharges the groundwater aquifers and also contributes to surface flows in streams and rivers. A part of the surface flows gets stored in tanks, ponds and dams. Creation of decentralised storages means that only the geographical distribution of water within the basin changes. Of course, this redistribution is important. But we should remember that we are not increasing the total quantum of water at the basin scale but only redistributing it. The JSA has been implemented without this basic scientific understanding. Therefore, there is a lack of management of water both at watershed and sub-basin/basin scale, bringing out the larger aspects of sustainability and also of overdesigning of water

harvesting structures. Hence, in addition to creating more water storages to impound water within the micro-watershed, a holistic understanding of the entire system is required, including impact assessment of the storage levels on other larger reservoirs. A thorough water balance study needs to be carried out at the sub-basin and watershed scales to manage exogenous and local water use optimally and in an integrated manner.

Regulation on Groundwater

Agriculture in Maharashtra is dominated by the competition to dig borewells, increasing the risk of drying out the aquifers as there is more abstraction versus the recharge. It was seen that most households in Pimpalgaon Tappa and Jawale villages—both in Ahmednagar district—own at least two–three functioning borewells, which are 300–450 feet deep. There is a virtual absence of any institutions that regulate water use. Similarly, there are no commonly agreed upon norms for water extraction and use. A water regulating body under the gram panchayat needs to be set up at every village to monitor the extraction of water from wells. Moreover, decisions need to be made at the village level—like that at Chinchondi—to limit the number of borewells per farmer. There are success stories like the Hivre bazaar where the positive impacts of no borewells for irrigation have been seen. If these successes in community-led water use regulation are to be generalised, it is very important to politically empower the gram sabhas and gram panchayats to carry out regulatory functions.

Revisiting Current Practices

Sugar cane, a known water guzzler, is grown in the state as an important cash crop, including in the drought-prone regions. The Government of Maharashtra has mandated the use of drip irrigation for sugar cane cultivation. Though this is important, it is not a complete solution to address water scarcity issues as the water saved is used to bring more area under cultivation, mostly sugar cane. Institutions—for example, water user associations (WUAs)—need to be created

so that farmers can come together to plan the crops as per water availability, distribute water equitably and use it more efficiently. Less water-intensive crops need to be encouraged, with an assurance of remunerative price from the government. Most of the farmers opt for sugar cane as there is an assured market price and it requires less labour. Emphasis needs to be given on improving water holding capacity of the soil so that crops can survive long dry spells. Low External Input Sustainable Agriculture (LEISA)-like practices need to be encouraged.

Conclusions

There is no doubt that rain is the most integral part of agriculture. However, according to a Marathi saying, “Dushkaal aasmani nasun sultaani aaha” (drought is not because of lack of rain but because of poor governance). Though decentralised solutions are very important, they alone cannot solve the issues of water security if not backed with suitable regulation of water use. As stated by Samuel et al (2009), the “natural” outcomes of a watershed programme are supplemented by human choices which alone determine the long-term impacts of equity and sustainability. Therefore, unless choices are made in a long-term perspective

through proper participatory planning, implementation, monitoring and regulation, the government and other funding agencies will continue to spend humongous amounts of money on water conservation projects like the JSA and still the number of drought-affected villages would keep on increasing. The JSA and other similar efforts do tell us that there are no quick-fix solutions to drought.

NOTE

- 1 The Bombay High Court asked an independent committee to be formed to evaluate works carried out under the JSA after a public interest litigation was filed by H M Desarda. The committee formed under the chairmanship of J Joseph was constituted in 2017 and submitted its report in 2018.

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