

Policy Brief

TRADITIONAL AGRICULTURAL PRACTICES IN A SATPURAN RIVER WATERSHED: DANGARWARI AND PAHARI KHETI

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Water Seekers' Fellow 2022



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OVERVIEW

Agriculture is a significant source of livelihood for well over half of India's population. While around fifty per cent of agricultural practices depend on groundwater for irrigation in a country that receives a substantial portion of its annual precipitation in merely three months, the other half of arable land is primarily rain-fed. Looking at different subsistence practices in the forested highlands of central India gives a sense of how the narratives of the environment and traditional knowledge systems are intricately intertwined. Distilled knowledge about the topography and landscape passed on over several generations has been crucial for sustaining local communities.

Since "agriculture"—which means the cultivation (cultra) of fields (ager)—is the purposive manipulation of soil and biota, effective management of land use is imperative for the functioning of hydrological and biogeochemical cycles. To learn about the process of cultivation in the Satpura hills and how traditional bodies of knowledge inform the local agricultural practices, I conducted several interviews with subsistence practitioners who depend upon a perennial river, Denwa. The process included talking with local communities, including fisherfolk and Adivasis in the Matkuli village stretch.

Multiple key points emerged during the course of the study, which would be instructive in exploring the relationship between the river and subsistence practitioners in the central Indian highlands. Surface water in the form of streams, rivers, ponds, and tanks has proven to be essential in an area where groundwater is difficult to abstract due to several geographical as well as economic reasons. A notable portion of the people in the region are either landless, and if they happen to have patches of land, they fall under the categories of small or marginal farmers with little or no surplus produce. They often work as farm labourers and go to nearby areas to work in construction sites, mills and brick kiln factories.

Risk is a prominent feature of the agriculture sector. This component becomes even more intensified in hilly regions such as the Satpuras. Nevertheless, people have constantly been working to tend the soil, pouring their energy and labour against all odds in order to produce. Such is the story of a traditional fisherfolk community, the Kahaar-Barauas, who practice a traditional form of agriculture on the common riverbed lands of Denwa called Dangarwari. This traditional occupation is an important source of livelihood for the community during summer.

The crop usually takes around three months to ripen after the seeds are sown during the Poos-Maagh months (December-January). During this time, a significant part of the process is looking after the crops and protecting them from wild animals. However, being a mountain river, Denwa is prone to floods after rainfall. These events have grave implications for the Dangarwari cultivators as their crops can be washed away in a matter of a few hours of rain, destroying months of hard work and patience of the Kahaar-Baraua community.

This year, the scenario was particularly dire. Heavy unseasonal rainfall in the last week of April destroyed the Dangarwari plants that were still in the process of ripening. Two villages where Dangarwari is largely practised—Jhirpa and Matkuli—were severely affected by the rains. Further, there are instances where the monsoons arrive early, leading to floods that

cause extensive damage to the fields located on the riverbed. Such fluctuating natural systems cause many problems, leaving the cultivators uncertain about the fate of their crops when something goes wrong. The risk associated with such an agricultural practice is notable in the face of human-induced changes to the ecosystem. Besides, the cultivators also shared that they are not considered 'farmers' by the government, preventing them from availing any form of compensation, such as crop insurance, if their Dangarwaris get affected by floods. Akin to Dangarwari cultivation, subsistence practices on the hill slopes are informed by traditional knowledge, which includes building ponds and tanks to conserve water and using traditional seeds in their agricultural practice. The process not only helps farmers but also tries to help retain the natural systems as the degree of purposive manipulation of the biota is relatively less. However, in contrast, the practice of land-intensive agriculture in the river's watershed entails the usage of large amounts of groundwater and chemical fertilisers, often by affluent farmers. Such manipulation of natural resources, on the one hand, marginalises other small and subsistence cultivators that inhabit the region; on the other hand, it leads to transporting residues of pesticides and fertilisers to the river and groundwater as a result of surface runoff, seepage and percolation of rainwater through and over the soils of the agricultural fields. This form of latent contamination of surface and groundwater in the watershed of the river is dangerous for humans and nonhumans alike.

POLICY SUGGESTIONS

In developing effective policies, it is crucial to consider the well-being of both human and nonhuman inhabitants of the area. By taking into account the needs and interests of all stakeholders, we can ensure that our proposed suggestions are inclusive and beneficial to the entire ecosystem.

It is important to acknowledge the invaluable knowledge possessed by the local community, particularly their rich repertoire of traditional knowledge about the river and the surrounding area. This knowledge underscores the intricate connection between the community and the river. They have long been looking after the river as their livelihoods depend on it, but also as they share a close affinity with it rooted in their belief systems. Therefore, it becomes excruciatingly difficult to conserve the river without their help and support. Doing so would not only benefit the community but also contribute to the well-being of the river, fostering a mutually beneficial relationship.

The study was conducted in a small part of the Matkuli region, specifically focusing on two areas—1) the lower-elevation riverbed and floodplains; and 2) the hill slopes that fall under the river basin where Pahari kheti is practised. However, it is essential to recognise that discussing Denwa in the context of the Matkuli region extends beyond the river. It entails acknowledging its intricate connection with the entire ecosystem. Therefore, the study's findings have led to the following suggestions, which aim to address water-related issues at the watershed/basin level and promote sustainable and equitable management of surface and groundwater resources.

- Recognise Dangarwari cultivators as proper 'farmers', so that they can avail some form of compensation through crop insurance (such as the 'Pradhan Mantri Fasal Beema Yojana') if their Dangarwaris get affected by floods.
- Adopt approaches that take cognisance of the dynamics between the soil and water interface while addressing water-related issues at a watershed level.
- Promote programmes that help conserve surface water by building ponds, tanks and other rainwater harvesting methods.
- Promote the conservation of rainwater in fields (मेड़बंदी, *maedhbandi*), which could help capture and retain moisture for the Rabi crop.
- Pond building and *maedhbandi* (मेड़बंदी) programmes could be connected to the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in order to provide employment to local inhabitants.
- Encourage the cultivation of rainfed crops that require less water; this feature is often seen in traditional seeds.
- Put more stress on the traditional systems of cultivation attuned to the local physical

geography and environment, which emerges as an alternative to the contemporary land-intensive agricultural practices.

- Install dustbins and garbage bins at public ghats to control plastic waste and other kinds of pollutants.
- Encourage the participation of elected public representatives, such as Panchayat Pratinidhis, Panchs, Sarpanchs, Janpad and the Gram Sabha members in the decision-making process and management of the river at the level of the watershed.
- Need to incorporate different stakeholders in the process of managing and governing waterbodies that include the local inhabitants such as Machwaare (fisherfolk), Charwahe (Herders), Kisaan (farmers), Majdoor (labourers), Mahilayein (Women), Adivasis, students, youths and other dwellers of villages.
- Sensitise school children and youths of the region about the local ecosystem by incorporating water and environmental literacy materials in primary and middle school curriculums.

At a time when water is seen as a commodity, the approach should be to see it as a life-giver not only to humans, but to the more-than-human world. Such a framework, in collaboration with local communities, would be crucial in laying a pathway for an equitable and sustainable present and future for all.

