

Conference session summary on Social and economic impacts of water harvesting Structures

Introductory note by the chairperson (Dr. Tushaar Shah)

The session started with a brief sharing around the groundwater governance. Different hydro-geological regions have different aquifer types and capacities. Hard rock aquifers in peninsular India are good only for drinking purpose. For revival of traditional water bodies like tanks, partnership between the state government and community is necessary. Water harvesting structures must be promoted as while during a bad monsoon year, they can save kharif crop while during a good monsoon year they can help in growing rabi crops. MGNREGA has played a key role in promoting water harvesting structures in Jharkhand and Chhattisgarh.

Presentations during the session

Primary data-based studies from across seven states were presented during the conference session exploring impacts of small water harvesting structures and tanks. Small water harvesting structures, which were part of the multi-location study are farm-ponds in East-Singhbhum, West-Singhbhum and Seraikela districts, farm-ponds in cascade in Gumla district of Jharkhand, Hapa (small farm-ponds) structures in Bankura district of West Bengal, plastic lined farm ponds in Chikkaballapur district of Karnataka and Doha Model (digging of lower order streams) in Yavatmal and Jalna districts of Maharashtra.

Studies discussed data related to changes in the following aspects.

- Agriculture – cropping pattern, yield, income
- Livestock and fisheries
- Availability of water for domestic use
- Groundwater recharge

Studies found a general betterment in agriculture due to increased irrigated area and an overall improvement in the crop related indicators. Livestock and fisheries showed an increased ownership with an increase in the fodder and production and breed improvement in case of livestock. Cost-benefit analysis shows a positive internal rate of return (IRR). Groundwater recharge also shows an increase across studies in forms of reduced tube-well depth, increased well water level, and a reduction in the number of dysfunctional tube-wells and handpumps.

Water harvesting structures have resulted in a reduced physical drudgery for women by facilitating easier access to water. However, no significant impact was recorded on the agency of women.

Since studies looked at different types of water harvesting structures of varying dimensions across different geographies, they raised certain points for discussion and deliberation for planning and implementation of a water harvesting structure. These points are as follows.

Water harvesting structures of different sizes have varying efficiencies. Geographical suitability of a structure brings up another set of parameters which include topographical location of the structure and the impact of rainfall on the capacity of the structure; opportunity cost of the land as against the benefits of the structure; low retention capacity of the structures on the upland and the geo-hydrological considerations while planning structure at a particular site.

Few challenges found through the studies are a low community participation, a lack of equity in the benefit distribution and the issue of frequent silting.

Discussion post-presentation

In general, the discussion in the session on water harvesting structures was filled with several insights and debates on nuances and region-specific ground realities. Following are the major points of discussion

- Promoting farm ponds with polythene layers reduces the utility of farm ponds to a mere storage structures rather than water harvesting and recharge structures. While the farm ponds in Jharkhand have been promising in various aspects, farm ponds in Maharashtra and Karnataka are found to pose several challenges. In these cases, farm ponds are often lined with polythene sheets to prevent seepage and are filled using groundwater and stream water pumped in using motor pumps. The groundwater which is safe from evaporation loss is subject to open storage leading to huge evaporation loss. Further, this approach gives way to privatization of commons, as farm pond owners tend to pump in as much water as possible from the stream as well as ground for their private use in the future. When such polythene layered ponds are promoted by government at subsidized rate, it would essentially mean that government is subsidizing the privatization of commons. *It is critical to flag the definitional issue and possibly mark farm ponds with polythene beds as “farm*

tanks” and those ponds without such polythene sheets are only to be called as “farm ponds” to avoid misnomers and inappropriate reporting of cost and benefits in the future.

- Often the presence of individual or scattered farm ponds may not show visible impacts in contrast to intensive community level promotion and presence of farm ponds. However, government schemes are gradually favoring scattered and private farm ponds. The funds on watershed programs are getting diverted to schemes like MGNREGA which is often being integrated to water conservation programs. Further, impact assessment of farm ponds are mostly studied and analyzed at individual farm basis. This approach limits the assessment in various aspects. It is *essential to study farm ponds as community level resources and emphasis the need for community level interventions.*
- Since farm ponds and other water harvesting structures impact livelihoods through farming, capacity building on agriculture needs to be part of water harvesting programs. *Importance of crop selection and use of soil residual moisture needs to be emphasized to improve water utilization and better realization of benefits* from such interventions.
- While farm pond helps farmers to go for Rabi cultivation, open grazing during Rabi season has often been found to hinder the second crop. It is essential to *study and design an approach to solve this competing interest of the community practice and the individuals.*
- Questions were also raised about the apparent benefits of farm ponds that are being reported against the contrasting lack of community participation in such programs and interventions.