

Ensuring water security through community-based tank desiltation: Gaalmukt Dharan Gaalyukt Shivar Yojana

Problem statement: Out of 580,000 tanks of various sizes spread across India, Maharashtra has the highest i.e. 42% of irrigation tanks. Since these come under the purview of state government; various line departments are involved in management while community involvement is limited. As a result of siltation, compounded by lack of regular maintenance; the storage capacity of these traditional structures diminished, leading to cascading effect on environmental and socio-economic condition of the state.

Intervention: Gaalmukt Dharan Gaalyukt Shivar Yojana' (silt free water reservoirs and silt applied farms), launched in 2017, is an initiative by Maharashtra Government towards ensuring water security through activities like community-based tank desiltation under RRR and WDC, along with awareness generation for efficient water utilisation.

- A Desilting Policy Committee was established by the state, which recommended desiltation of 31,459 small dams and water tanks in the state.
- Considering its potential in improving drought resilience, the program was included as part of revised state water policy in 2019.
- Active involvement of CSRs/NGOs was promoted: While the state government provided fuel subsidy; machine rent cost was contributed by community/ pooled through CSR/ NGO funds.

Impact: Impact evaluation study by The Nature Conservancy and Watershed Organization Trust indicates:

- Increase in water holding capacity and improved organic carbon in the soil after silt application. However, the effect was found to vary depending on soil characteristics: texture, bulk density and water holding capacity.
- The total area under cultivation increased during both Rabi and Kharif season while proportion of rainfed and wasteland areas reduced. Additionally, area under water saving technology increased by more than 2 times.

- A reduction in per acre cost of fertilisers was observed for major crops.
- The average annual income was found to increase from Rs. 37, 489 to Rs. 92, 855. This further led to enhancement in socio-economic status of farmers:
- With benefit-cost ratio of 1.31 (for three tanks), desiltation was found as economically viable activity, even when only enhancement in soil fertility was considered. Other direct-indirect benefits of desiltation like increased water storage capacity and improved soil texture were not accounted for in calculations.
- Other impacts: reduction in migration, increase in biomass leading to more fodder for livestock and groundwater recharge.

(References: Zade et al, 2020. 'Gaalukt Dharan, Gaalyukt Shivar (Tank Desiltation) Scheme in Maharashtra, India: Policy Concerns and the Way Forward', 16/0 Law, Environment and Development Journal. Sood et al., 2018. 'An Impact Evaluation Study and Proposed Guidelines for Water Tank Desiltation in Maharashtra' by The Nature Conservancy, India and Watershed Organisation Trust.)