

WATERSHED MANAGEMENT

Watershed development is the origin and foundation of India's climate change adaptation initiative



Degraded lands, soil erosion, water runoff and deforestation were identified as the cause of environment degradation, poverty, low human index and a fractured village. Experience says that even with rainfall of 400mm per annum, when the local inhabitants come together to regenerate their watershed, miracles happen: reverse migration, enhanced productivity (from agriculture, livestock, fisheries, forests and pastures) and communities developing a common vision for their future become possible.

Rainfed areas assume special significance in terms of agricultural productivity and livelihood for millions of rural households in India. These areas not only constitute nearly 57 per cent of the cultivated area but also account for production of bulk of millets, pulses and oilseeds. Rainfed agriculture although is a risk-prone activity, have the potential to contribute a larger share in the food grain production, if managed properly. These high potential rainfed areas provide us with opportunities for faster agricultural growth compared to irrigated areas that have reached a plateau.

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PROJECT FACTS

Total Number of Projects	1835
Financial Outlay	US \$ 281 million (INR 16,860 million)
Area Covered	1.89 million hectare

resilience and strengthening adaptive capacities. In times of drought, it captures rainfall in-situ, recharging ground water sources. In times of cloud bursts or intense rains, it helps control floods, reduces soil erosion and minimizes losses to livelihoods, infrastructure and life. Forests, afforestation and revived grassland sustain biodiversity, retain water and moisture in soils and micro-environments for longer periods and

reduce the adverse impacts of extreme climate events. It provides the environmental resources that can enable affected communities to better cope with such shocks and adapt to them. Hence, watershed development is the mainstay for climate change adaptation.

In the context of climate change, watershed management plays an important role in mitigating weather induced risks, building resilience, and strengthening adaptive capacities. In times of drought, it captures rainfall in-situ, recharging ground water sources. In times of cloud bursts or intense rains, it helps control floods, reduces soil erosion and minimizes losses to livelihoods, infrastructure and life. Forests, afforestation and revived grassland sustain biodiversity, retain water and moisture in soils and micro-environments for longer periods and mitigate the effects of soaring temperatures on living beings. Watershed management, thus, helps reduce the adverse impacts of extreme climate events. It provides the environmental resources that can enable affected communities to better cope with such shocks and adapt to them. Hence, watershed development is the mainstay for climate change adaptation.

Action Taken

NABARD has been implementing participatory watershed development programmes for more than two decades with an aim to reduce risk associated with dry land farming systems and livelihood through holistic development involving soil and moisture conservation, productivity enhancement measures, alternative livelihood interventions, etc.

The uniqueness of these programmes is people's participation in planning, implementation of the projects, monitoring as well as financial management through community based organisations. All project villages have systematic watershed treatments implemented from ridge to valley.

Keeping in mind the specificities of climate variability (rising temperatures and erratic rainfall), as a part of watershed development effort, certain activities were emphasized like conservation and planting of local indigenous plant species; digging of water absorption trenches on the upper, middle and lower portions of hillsides, with planting of grasses and vegetation that stabilize these and bind soils; designing of water impounding structures that are strong enough to withstand high intensity runoffs or which can "fail safely" (a larger number of smaller structures); prioritized soil



conservation measures (land treatments) while dovetailing these with water harvesting structures (drainage treatments); changes in cropping and land use patterns to include water – sipping crops (such as millets), tree-based and mixed farming systems; introduction of "water budgeting" at the community and farm level as well as conservation irrigation technologies (micro-irrigation systems) to determine which crops can be cultivated given the available water etc.



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