BOARD OF REVENUE FOR RAJASTHAN

Watershed Development and Soil Conservation in India

Director Watershed Development and Soil Conservation, Rajasthan
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It gives me immense pleasure to address you today. Thank you for inviting me to Pant Krishi Bhavan, where I served as the 3rd Director of the Department of Watershed Development and Soil Conservation from August 1995 to January 1998. I return after a gap of 20 years to this conference hall. When I was appointed to this post, Chief Secretary late Shri M.L.Mehta ji in his briefing meeting said "*I want you to be a spokesperson for millions of rainfed farmers of Rajasthan, to achieve the vision of a drought proofed Rajasthan."* I have extremely fond memories of my years as Director Watershed Development & Soil Conservation, I traveled the length and breadth of the State visiting every district, every Panchayat Samiti of Rajasthan. Tours would normally cover 4-5 districts with 3-4 night halts per visit, covering a distance of 1500 kms with every visit. So great was my enthusiasm for a drought proofed Rajasthan that I drove from Jaipur to Barmer in one day interspersed by review meetings at Ajmer and Jodhpur. Watershed Development is a people's movement in Rajasthan. By the time I completed 27 months on this job, I had received several awards from the President of India for Highest Productivity in Rainfed Agriculture – Khamli Ghat, Cheeta Kheda, Saradhana Kesarpura, Losing, Integrated Watershed Development Program of Bhilwada, were all award winning watersheds where transformation was witnessed sustained by significant people's movements.

The rainfed areas of India are amongst the most challenging for the sustenance of agrarian economy. They are almost entirely single cropped areas with scanty rainfall, prone to frequent droughts, soil erosion, characterized by fragile pasture lands necessitating large-scale cattle migration, depleting water tables, low employment opportunities and chronic poverty levels. It was to address these very challenging agrarian economies that the watershed development and soil conservation programs were formulated.

Watershed Development initiatives in the 1990s

In the 1990s, watershed based efforts at resource management had great appeal amongst academics, policy makers, environmentalists and had spawned considerable activity on a pan India basis. India's policy makers held the view that the watershed approach was inherently sound and filled a major gap in our land and water development programs. From the WARASA guidelines in 1990-91 to the 2015 NEERANCHAL guidelines, integrated watershed management program has remained a flagship program for government in its efforts for drought moderation. The program has developed into a huge people's movement based on pragmatism and effective regional organizations.

The Government of India held the view that the best way to reclaim watersheds was through an integrated management model given the inter-linkages between the diverse dimensions – the natural resources, humans and cattle all of which were inter-twined. Lack of comprehensiveness and integrated management of watershed management activities led to severe soil erosion and environmental problems. Watershed development projects were considered feasible if the benefit cost analysis indicated that the benefits exceeded costs, or if each of the separate purposes of the project indicated benefits equal to costs. Watershed development works of drainage line treatment, farm ponds, use of vegetative technology for soil conservation were undertaken in areas where maximum benefits could be realized, with the objective of achieving the highest cost benefit ratio.

DPAP and DDP

Dr. C.H.Hanumantha Rao chaired a technical committee on Drought Prone Areas Program (DPAP) and the Desert Development Program (DDP). He recommended these schemes be recast on a more participatory watershed development model to make them effective. He said that despite the fact that DPAP and DDP had been in operation for almost 2 decades, it was observed that the programs had not created a substantial impact. The drought conditions in the country were increasing and ecological degradation was taking place unabated especially in drought prone and desert areas. The success stories at Ralegaon Sidhi and Adgaon in Maharashtra, Kabbalnala and Mittemari in Karnatak, Jhabua in Madhya Pradesh presented a case that drought can be beaten with concerted efforts for development on watershed basis and active participation of local farmers willing to undergo sacrifices and share benefits. The Committee recommended that greater attention be given to people's own strategies and their own indigenous technologies including the locally preferred plans so as to incorporate them in the programs to mitigate the rigors of drought. They reiterated that harmonious management development and utilization of land, water and vegetation resources on watershed basis should be implemented with total participation of beneficiaries. The recommendations of the Technical Committee on DPAP and DDP resulted in comprehensive recasting of these schemes on watershed development basis.

NWDPRA

The watershed movement was much more than an organized effort of Government. It entailed complex issues of coordination as India entered the watershed collaborative era giving greater access to citizens and local organizations in decision-making and holistic management principles. The National Watershed Development Program for Rainfed Areas (NWDPRA) recognized that sustainability was possible only through people's participation and implementation should be through a participatory model. It further recognized that capacity building was needed for all stakeholders. Institutional development should start from the planning stage and continue to project implementation and maintenance stages. Exposure visits were necessary for increasing awareness levels and interaction. The role of women was seen as crucial from planning to implementation. Monitoring and evaluation from an independent agency was necessary. Conventional watershed activities had little potential for raising incomes of farmers. Hence the integrated management of watersheds broadened the scope of projects to include subsidiary income generating activities, agricultural/ non-agricultural activities.

The objectives of the NWDPRA were (a) conservation, development and sustainable management of watersheds including their use, (b) enhancement of agricultural productivity and production, (c) restoration of ecological balance in the degraded and fragile rainfed ecosystems by greening the areas through appropriate mix of shrubs, trees and grasses, (d) reduction in regional disparity between irrigated and rainfed areas and (e) creation of sustainable employment opportunities. The focus was on the guiding principles of NWDPRA - conservation of natural resources, integrated development of natural and social resources, in-situ moisture conservation, sustainable farming systems, adoption of ridge to valley approach, due emphasis on mobilization of communities at village level, direct funding and empowerment of village communities and building indigenous innovations. The Watershed development was undertaken in a phased manner, with an awareness generation phase, a capacity building phase and a project implementation phase followed by sustainable management phase. The District level project implementation agency was supported by village level watershed development teams and watershed communities

IWDP

From 1990-99, the World Bank financed India's Integrated Watershed Development Program (IWDP). The project objectives were to introduce improved and sustainable land management practices in selected watersheds through the promotion of cost effective and replicable conservation technologies. The project sought to adopt institutional arrangements to facilitate inter-agency coordination in watershed planning and implementation, and to ensure full participation of watershed land users in the development and management of common properties.

Following completion, the World Bank assessment of the project outcomes was satisfactory. All project objectives were substantially achieved. The program of land treatments were either substantially achieved or even exceeded and were generally of good quality and developments created positive impacts on the conservation and restoration of natural resources and increased agricultural production. The project also substantially improved the collective capability of government agencies to implement programs of watershed development. It helped achieve substantial involvement and commitment of local communities in planning, managing and maintaining improvements of communal and individual natural resources and assets.

The key lessons learnt were

- Initiatives that benefitted project implementation included (i) regular supervision and constructive approach, (ii) flexibility to respond to the needs and priorities of beneficiaries, (iii) emphasis on beneficiary participation and strictly following cost sharing norms, (iv) regular training/ exposure of the staff to methodologies and experiences in watershed development, (v) maintenance of staff continuity; (vi) introduction of innovative ways to facilitate inter state exchange of experiences.

- Potential improvements that should be considered in the design of future watershed development projects included the need to assign sufficient time and emphasis in the beginning of projects to governmental and community joint planning (defining, location and sequencing project interventions and assigning responsibility) in watershed development. This was necessary to ensure direct emphasis on women's needs, aspirations and involvement in watershed development, and give more emphasis to policy and action plans concerning macro level management of natural resources, particularly issues associated with over grazing and over utilization of natural fodder and forest resources.

HARIYALI

With the emergence of the Panchayti Raj institutions, the watershed development teams at village level got merged with Gram Panchayats. This resulted in watershed development programs at each level being administered by people who had many other responsibilities. This was seen at the district level and also at the field levels. There were coordination difficulties between transient actors pursuing departmental agendas. The sharp focus needed to implement watershed programs was often absent because the officials had many other competing priorities. The HARIYALI guidelines required to be recast for effective implementation. The Parthasarathy committee report recommended a National Authority for Sustainable Development of Rainfed Areas, to be set-up as a quasi-independent authority to manage the watershed programs. This National Authority was to be responsible for bringing prosperity to the watershed regions through the sustainable development of natural resource base. The Committee also recommended that watershed development works be taken up over a 8 year program period divided into 3 phases – phase I for 2 years to be termed as the preparatory phase of the program, phase II for 4 years to be termed as the resource augmentation and institution building phase and phase III for 2 years to be termed as the sustainable livelihoods and productivity enhancement phase. The Technical Committee formulated the Neeranchal guidelines for watershed development to replace the Hariyali guidelines.

NEERANCHAL

In 2015 Government of India approved the World Bank assisted project "Neeranchal" for implementation. The Neeranchal scheme was designed to bring about institutional changes in watershed and rainfed agricultural management practices in India. It aimed to build systems that ensure watershed programs and rainfed irrigation management practices are better focused and more coordinated and have quantifiable results. Further it aims to devise strategies for the sustainability of improved watershed management practices in program areas, even after the withdrawal of project support. It promoted a watershed plus approach, support improved equity, livelihoods, and incomes through forward linkages on a platform of inclusiveness and local participation.

The Neeranchal project with an outlay of Rs. 2142 crores sought to translate into better implementation the outcomes of Pradhan Mantri Krishi Sinchayi Yojana (PMKSY). Neeranchal supported both the conservation and production outcomes including the availability of water in rainfed areas, catering to the needs of small and marginal farmers as well as the asset-less, including women. Neeranchal incorporated the best practices of watershed management in India. It emphasized the need to improve knowledge sharing in support of project preparation, publish draft reports on progress achieved, collate best practices in key areas, conducting knowledge fairs and workshops. The challenges remained in enhanced participation of communities, building stronger capacities and systems to plan, implement, monitor and post-project sustainability of local institutions and assets. These challenges were to be addressed during the implementation phase under Neeranchal.

NRAA

The National Rainfed Area Authority (NRAA) was constituted as an attached office of the Department of Agriculture and Cooperation in 2006. The authority serves as an advisory body for policy and program formulation and monitoring of schemes and programs to resolve the agrarian challenges across the vast rainfed system of the country besides promoting sustainable practices for steady growth of agricultural sector and farmer's welfare. The NRAA serves as a knowledge platform and connects research and academic institutions and implementing agencies. It also focuses on livelihood opportunities for the landless and marginal farmers who constitute a large majority of the rainfed area population. NRAA facilitates skill and knowledge development of farmers and enables openness and ability to adopt improved technologies and management practices for crop production, animal husbandry, horticulture, agro-forestry and farm resources linked enterprises. The strategy for achieving sustainable and comprehensive development of the rainfed system in the country is guided by the principles of integrated farming systems, watershed management and resilience in the context of climate change.

The long-term measures for drought mitigation suggested by the NRAA are in-situ conservation of rain water, contour cultivation, sowing on ridges or raised beds especially in black soils can raise productivity by 15-20 percent. Seed replacement rate of pulses, oilseeds and cereals with latest improved varieties would enable enhanced yields. Breed improvement of cattle population along with castration of scrub bulls has been identified as a major intervention. The NRAA has also recommended longer credit cycles in rainfed areas in cases of weather contingency.

Conclusion

To conclude it can be said that India's watershed development programs in the collaborative era have witnessed several success stories. The country has established an apex authority the NRAA for technical assistance. The program guidelines have been made highly participatory and adequate time has been given for implementation. The government has provided adequate resources and manpower for effective implementation. In the successful implementation of the Neeranchal program lies the future of millions of rainfed farmers of India.

I wish each one of you all success in you challenging policy endeavors.

Jai Hind.

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