

Watershed Management and Community Participation

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Rs. 600 billion (about 140 billion US\$) have been allocated for watershed management in Ninth Five-Year Plan in India. In fact access to water has emerged as a new divider in watershed development programmes as about 80-90 percent of money is being spent on rainwater harvesting and soil and water conservation. However, Indian experience in the past shows that implementation of watershed development programs is tardy due to either non-involvement of people as these are mainly government sponsored programmes or the Watershed Development Committee does not have any legal power. Nonetheless, there has been a few instances of success where community participation has been ensured in watershed development programs as is evident from 16 papers presented under this theme.

Ten papers directly deal with the theme of the session. Merz et al (Water and erosion studies in an integrated watershed management project in the Hindu-Kush Himalaya) discusses people and resource dynamics through generation of technologies and philosophy of water balance and sediment transport measurement set up. Sikka and Samra (Participatory water management - a new paradigm for integrated water resource management) presents an overview of watershed management in improving water resource availability through people' participation in Western Ghats Region of India. Sinha and Raghuvanshi (Sustainable integrated watershed management and the community efforts for the same in the north eastern region of India) emphasises that empowering users and institutionalising their ownership of resources, programmes and processes of watershed management to be the important key elements in the participatory processes. Chauhan and White (Community participation in storm water management in the Hawkesbury-Nepean Catchment, Australia) develops a transparent decision support system for storm water management in Sydeny involving extensive community participation in a more meaningful way. Gyan - Boakeye and Tumkulto (Community involvement in watershed management in Ghana) look at some of the corrective measures such as controlled timber extraction, ban on illegal chain saw operations, afforestation by communities and NGO, and notifying watersheds as protected areas to arrest degradation in Ghana. Patnaik et al (Community participation in a tribal dominated micro-watershed development project in Eastern Ghats - a case study) emphasises community empowerment through capacity building and revitalisation of community structures for strengthening the community re-

sources to ensure viability and sustainability of the watershed management. Sevekari and Shukla (Participatory watershed management - a lesson through experience) brings out the fact that watershed management can only be achieved through participation of localities resulting in drought management and development of a health society. Lohan (Community participation in watershed management - Haryana experience in World Bank added project) finds the mobilisation of communities to be helpful in sustaining the assets created through watershed thereby ensuring the involvement of the beneficiaries. Yadav and Bhushan (Paradigm of participatory watershed management for sustainability - principles and practices) suggests Technical Rural Appraisal for implementation, controlling and safe maintenance of sustainability following PRA to achieve success of watershed management. Nayak (Promoting low cost technology and cost sharing for community participation in watershed management) observes that increased community participation in watershed management provided short and long-term benefits to each of the farmer in a sustainable manner.

Six papers are peripheral to the theme of the session. Magnesan (Drainage and reuse of effluents for agricultural management - a dream project for developing countries) offers a simple and holistic approach to reduce/remove contaminants from effluents for providing clean, useable water for agricultural management. Verma and Sinha (Artificial recharge of ground water in hard rock terrain through Chakriya Vikas Pranali - case study of Palamau District in Bihar State) discusses an innovative cyclic mechanism of in situ conservation of rainwater through check dams recharging groundwater for regeneration of degraded land. Purandara and Belt (Assessment of cumulative watershed effects using WATSED Model) successfully utilises WATSED model to estimate the cumulative effects of various management activities in Karnataka, India. Tiwari et al (Estimation of runoff and sediment yield under different land uses in Bundelkhand Region) analyses the impact of land use on runoff and soil loss through a process-based model derived from the continuity equations for runoff and sediment transport. Khandelwal et al (Increasing agricultural production through optimal use of harvested rainwater at Targhadia watershed, Rajkot, Gujarat, India) developed a computer program to design parameters for rainwater harvesting structures and matches the quantity of harvested rainwater to set alternatives for crop growth during different seasons. Gupta et al (Impact assessment of conservation measures in arid areas - a case study of Osian - Bigmi, Jodhpur Watershed) have revealed significant improvement in ground water recharge and crop yield following various conservation measures in an arid zone watershed.

Major recommendations emerging out of the above 16 papers are :-

- * Peoples participation is a must for successful implementation of watershed management programs. It is the people who can make or mar the success of any development activity.
- * Integrated watershed management conserves natural resources, which leads to sustainability of the environment.