# Securing the Future: A Watershed Approach Uttaranchal, India

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Panoramic view of Uttaranchal, India

**The Himalayan Mountain State of Uttaranchal is characterised by a relatively young geology with a complex physiography which is tectonically unstable. Soils are generally shallow. Temperature variations, moisture conditions, and local factors are wide-ranging in the Himalayas, resulting in rich biodiversity of both flora and fauna.**

Young rock formations, friable surfaces, steep slopes, extreme seasonal and diurnal temperature changes and intense monsoon rains make the Himalayas prone to erosion. At the same time, the Himalayas are water towers for some of the most important Asian rivers, i.e., the Ganges, Brahmaputra, Indus, and the Mekong. Widespread deforestation has aggravated erosion, led to increased downstream flooding, and reduced base flows. This deterioration in the natural water resources has resulted in loss of bio-diversity and natural habitat. Agricultural activities on steep slopes and depleting vegetative cover with consequent erosion are also destroying the ecosystem and the productive potential of this area of the Himalayas.

The evolutionary process of integrated watershed management in India began with the first generation projects during the 1980s. They were conceived primarily to target forest productivity and conserve soil, but they had limited success. The second generation of projects adopted a more integrated management approach to all watershed resources, taking into consideration better conservation and use of all natural resources at watershed and community levels. This involved the active participation of local communities and all stakeholders, resulting in meaningful and successful long-term sustainable development.

A silent yet powerful revolution – the Integrated Watershed Development Project – was kick-started in

1999 throughout Uttaranchal. It was a project that was unprecedented, not only in its magnitude and vision but also in the fact that it actually aimed at social empowerment and sustainable development at grass roots' level. Besides ensuring people's participation, the project advocated implementing gender mainstreaming integrated into project execution: the project targeted women as its major partners. Some of the major aspects and impacts of the project are summarized in the following. More details can be found in WMD (2005) and WMD (undated).

## An insight into the project

With financial assistance from the World Bank, the project had an added emphasis on growth through empowerment. With the belief that sustainable growth is possible only through grassroots empowerment, the project promoted changes that were unprecedented in the history of the state. The project area covered three districts (Pauri, Nainital, and Udham Singh Nagar) of the Shilwaliks where 1,573sq km were included. In 24 micro watersheds, 493 revenue villages were developed. This was the outcome of the five-year project – Rs 1,857 million were invested benefiting a population of 175,000.

The project faced tremendous challenges in terms of environmental disasters, a dismal economic backdrop which was a result of the low priority given to environmental conservation, inadequate people's participation, poor access and benefit sharing, unequal development within watersheds, and low levels of efficiency.

In a fresh approach, the project was showcased as a people's project in which the communities were not only beneficiaries but also partners in progress. This was implemented by strengthening village-level institutions, bringing about a dramatic social transformation and self-empowerment drive.

Income-generating activities such as cultivation of organic medicinal and aromatic plants, along with alternative high-value cash crops were undertaken resulting in substantial additions to local incomes. Various training programmes and workshops providing knowledge about artificial insemination and better breeding techniques, augmented by para-vet centres, have been very beneficial to the rural people involved in livestock development. With these initiatives, milk production has increased 35-56%.

The project promoted appropriate use of land and natural resources for fuel, fodder, small timber, and success of new plantations. This approach resulted in tremendous improvements in these parameters. Fodder deficits were reduced by 21% (62% to 41%). The percentage of new plantations surviving was as high as 70%.

Key issues addressed during the project included non-arable land treatments, soil conservation, and effective use of water resources. The intensity of irrigation was increased by 26% and the net irrigated area increased by 30% (4,244 ha). Even soil loss was reduced by 26%.

One of the first tasks undertaken by the project was building village infrastructure, commencing with village bridle paths and small contact bridges. This initiative led to the improvement of a 681 km long bridle path in 281 villages, benefiting 58,815 people.

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Organic production of medicinal plants in Garhwal, Uttaranchal

## The road ahead

On the basis of the implementation of this project in Uttaranchal, the following strategy could be used as a road map for addressing rural problems through integrated watershed development.

- Empower and strengthen capacity-building of local village-level institutions to involve them in the decision-making process.
- Promote sustainable production of biomass and restoration of ecological balance through conservation and improvement of natural resources.

- Replenish the ecological equilibrium to increase fodder and fuel availability in the local community.
- Introduce low-cost conservation measures/strategy based on indigenous practices and devices with greater reliance on measures for conservation of vegetation.
- Focus on strengthening the livelihood system of the rural poor to improve both their social and economic status.
- Cultivate high-value medicinal and aromatic plants, high-value cash crops, bamboo and Jatropha for income-generating activities.
- Improve land management through good practices and control of soil erosion.
- Introduce better agricultural practices and crop diversification to ensure subsidiary income for the local population.
- Conserve and manage rainwater for sustainable agriculture in rainfed areas with low-cost small dams to augment activism of water courses (drainage lines).
- Form self help groups for poor marginalised groups, women, and other poor people to share benefits and become involved in decision-making.
- Promote rural health and sanitation through awareness generation and through construction of community toilets and drainage.
- Coordinate and converge, with proper networking, all stakeholders and linkages with scientific institutions and civil society organisation for technical know-how, and social mobilisation groups.

Community participation forms the backbone of any social development project. Experience has shown that development and resource management activities by state agencies have become increasingly difficult and costly without yielding the results desired. On the other hand, steps undertaken that involve local communities, self-empowerment of village institutions, and incorporation of gender-sensitive components in projects have improved the situation tremendously. This Integrated Watershed Development Project in Uttaranchal has taught us valuable lessons that can be used to implement similar projects throughout the entire mid-Himalayan range.

**References**

WMD (undated) webpage of the Watershed Management Directorate: www.gov.ua.nic.in/wmd

WMD (2005) *Fifteen years of Perspective Plan for Watershed Development for the State of Uttaranchal*. Report prepared by Watershed Management Directorate (WMD), Dehradun, Uttaranchal, India