

Integrated Watershed Management for Water, Food and Livelihood Security in Rural India

Environmentally Sustainable - Multiple Co-benefits - Community Led - Inclusive Development

An integrated solution for addressing the twin challenges of reducing poverty and regenerating the natural resource base

50 villages in 2 states in Central India

18000+ hectares of land treated

11000+ farmers engaged

Over 10 million litres of water conserved every year

30% increase in agricultural productivity

50% of land under single cropping converted to double cropping

70% reduction in water runoff leading to reduced soil erosion

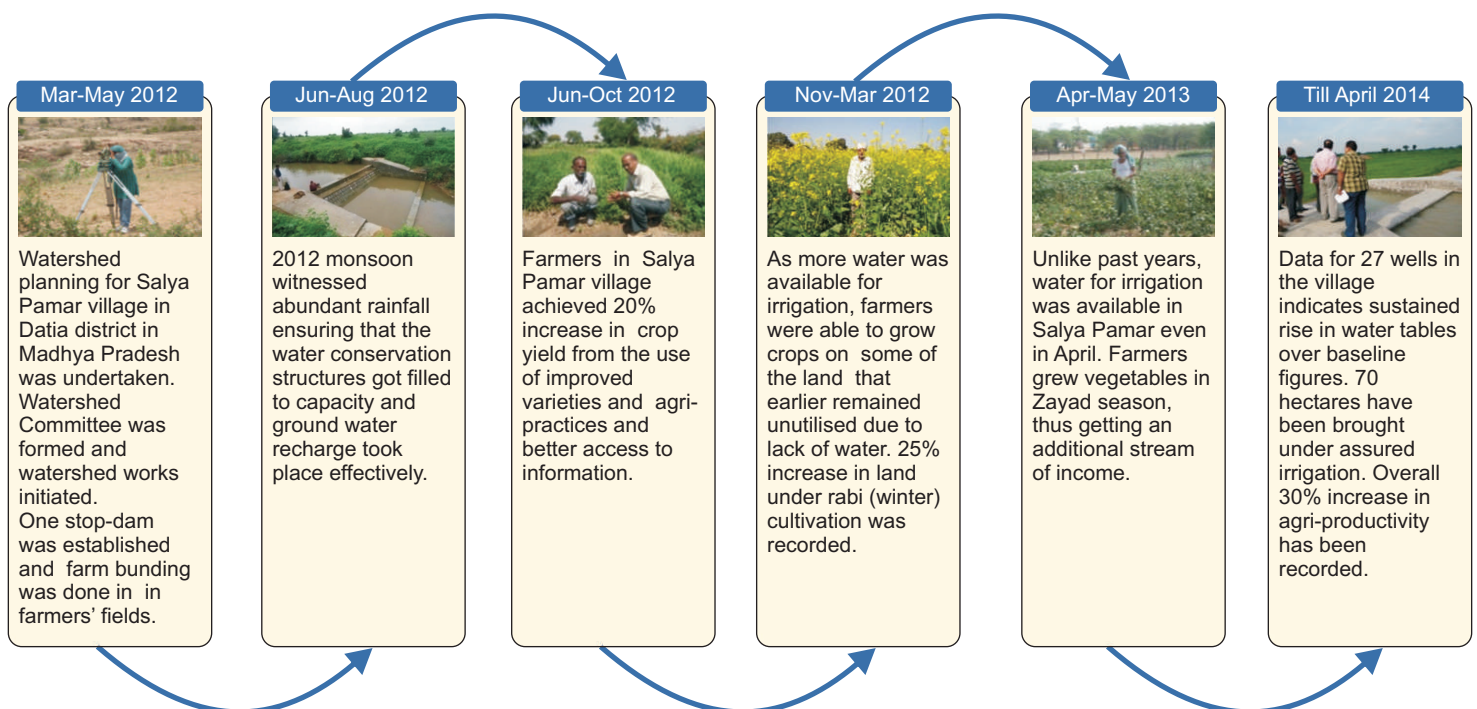
5 years is the programme implementation time



Across the country, ground water levels have been falling at an unprecedented and alarming rate. This may be largely blamed on the over-extraction of ground water for intensive agriculture coupled with a reduction in recharge potential due to deforestation and other land use changes. Crop yields and farmers' incomes have been adversely affected resulting in stress induced migration to urban areas. With climate change, rainfall patterns are expected to get more erratic thus further aggravating the water stress.

Integrated Watershed Management provides a sustainable solution for restoring the ecological balance and productive potential of the land through conservation of soil and water and regeneration of the vegetative cover. The model merges scientific approaches and participatory processes such that the regenerated natural resource base acts as a foundation for delivering improved livelihood security.

Integrated Watershed Management – A Case Study



Integrated Watershed Management undertaken by Development Alternatives in the Bundelkhand region is largely being supported under the aegis of the Rajiv Gandhi Mission for Watershed Management, a flagship programme of the Government of India.

Implementing Integrated Watershed Management at the Grassroots – A Snap Shot

Scientific Watershed Planning based on Participatory Approach	Institutional Mechanisms for Community led Watershed Management	Establishment of Soil and Water Conservation Structures	Training for Productivity Enhancement and Livelihood Diversification	Institutional Systems for Sustainability
<ul style="list-style-type: none"> • Scientific ridge-to-valley approach used for identifying points of intervention for soil and water management based on slope, elevation and recharge potential of the land. • State-of-art Geographic Information System (GIS) tools used for resource and intervention planning. • Participatory net-planning process for securing buy-in and cooperation of the participating farmers. 	<ul style="list-style-type: none"> • A Watershed Committee (WC) is formed in each village (micro-watershed) comprising of panchayat members, farmers, women and marginalised groups. • Wcs are trained on watershed management and monitoring. • Water User Groups (WUGs) are established for shared use, management and maintenance of structures. 	<ul style="list-style-type: none"> • Establishment of soil and water conservation structures is coordinated by the Watershed Committee and undertaken in convergence with government programmes such as MGNREGS. • Technical support is provided by Development Alternatives in its capacity as Project Implementation Agency. 	<ul style="list-style-type: none"> • Farmers are organised into farmers' clubs and training is imparted on improved agri-practices for reduced climate risks and improved productivity. • Trainings on off-farm and non-farm income generation activities are undertaken especially for landless farmers. • Self Help Groups (SHGs) are formed and income generating activities are promoted through provision of micro-credit and trainings. 	<ul style="list-style-type: none"> • A Watershed Development Fund is established for continued maintenance of the structures in the long term. • It also functions as a revolving fund to provide micro-credit for initiating enterprises and income generation activities.

Integrated Watershed Management – A Cost Benefit Analysis

The Integrated Watershed Management experience proves that it is possible to make agriculture on small farms profitable so that such farmers can break free from the vicious cycle of poor production, poverty and debt. The average investment required for integrated watershed management is in the range of INR 10,000 per hectare which includes cost of infrastructure, capacity building and establishing institutional systems and linking farmers and watershed committees to government departments and public programmes. Within two years of the intervention, a farmer registers an annual productivity increase of 20-25% resulting from both enhanced productivity per acre and an increase in cropping intensity. Better market and information linkages and improved produce management

leads to an overall increase in income by up to 30%.

As observed in the semi-arid Bundelkhand context, a farmer with 1 hectare of land and cultivating only 60% of it can improve the cropping intensity from 120% to 182% and in addition bring 10% of the previously uncropped land under cultivation. This translates into an improvement in the annual income to the tune of about INR 30,000 making the initial investment completely recoverable.

And this does not even begin to take into account the range of invaluable ecosystem services such as soil nutrient recycling, erosion control, ground water level rise, flood management, biomass and biodiversity enhancement that are gradually restored.

The Opportunity

Rain-fed agriculture supports about 40% of the country's population. About 85 million hectares or 60% of the net cultivated area in India is classified as rain-fed. Rain-fed areas can benefit greatly from watershed development interventions in terms of enhanced water security, reduced soil erosion, reduced climate vulnerability and improved agricultural productivity. With the global demand for food slated to double by 2050, the need of the hour is to improve per acre productivity without undermining the natural resource base. This model of integrated watershed management provides an ideal solution.



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