

# RAINFED FARMING SYSTEMS

The Government of India has accorded high priority to the holistic and sustainable development of rain-fed areas through an integrated watershed development approach. The key attributes of the watershed approach are conservation of rainwater and optimisation of soil and water resources in a sustainable and cost-effective mode. Improved moisture management increases the productivity of improved seeds and fertilisers; conservation and productivity-enhancing measures become complementary.

16.2 The National Watershed Development Project for Rainfed Areas (NWDPR) is the main programme for the development of rain-fed areas through the watershed development approach. The broad objectives of the NWDPR are as follows:

- Conservation, development and sustainable management of natural resources including their use;
- Enhancement of agricultural productivity and production in a sustainable manner;
- Restoration of ecological balance in the degraded and fragile rain-fed ecosystem by greening these areas through an appropriate mix of trees, shrubs and grasses;
- Reduction in regional disparity between irrigated and rain-fed areas; and
- Creation of sustained employment opportunities for the rural community including the landless.

16.3 The Scheme of NWDPR was subsumed with the Scheme of Macro Management of Agriculture through Work Plans from 2000-01. The scheme is being continued for implementation during the Tenth Plan under the revised guidelines with peoples' participation covering more than 6000 micro-watersheds. It is estimated to develop an area of about 20 lakh hectares during the Tenth Plan at an estimated cost of Rs 1000.00 crores. The cumulative area developed since beginning of the Tenth Plan (April 2002 to December 2006) is 18.85 lakh hectares by incurring an expenditure of Rs 881.53 crore.

16.4 An amount of Rs 305.47 crore has been earmarked for implementation of the NWDPR during the year 2006-07. An area of 2.34 lakh hectares has been treated and developed at the cost of Rs 94.20 crore during 2006-07 (up to December 2006). Progress of some of the important activities under the NWDPR for the year 2006-07 (upto December 2006) is as under:

- Run-off management structures completed during the year - 38204
- Water harvesting structures completed during the year - 38971
- Self Help Groups (SHGs) formed and operationalised - 29995
- Users Groups (UGs) formed and operationalised - 42425
- Drainage line treatment done through- 238468 structures (all types)

16.5 Some of the benefits of the NWDPPRA programme to the watershed community through various interventions are as under:

- The programme has provided employment opportunity to local people through various development activities in the watershed area.
- The programme has benefited the farmers through increased production and productivity of various crops in a sustainable manner.
- The programme has helped in the restoration of ecological balance through the plantation of trees, shrubs and grasses, etc., in the project areas.
- In some of the drought-prone States, water-harvesting structures have provided improved drinking water facilities.
- The improved ground water recharge due to various soil and water conservation measures has helped the farmers to bring more area under cultivation.
- The programme has helped in reducing soil losses and improving water conservation.
- The new mode of peoples' participation, i.e., involving the watershed community in various activities to be carried out in the watershed has empowered the local watershed community.
- The flexibility in choice of technology has helped in introduction of encouraging location-specific and low-cost indigenous technologies in the watershed.
- Landless families are benefited through provisions available under the livestock and service sector.
- There is a provision under the programme for popularising new dry-farming techniques through demonstration at farmers' fields. This has encouraged farmers to adopt new farm technology for better yields.

16.6 The details regarding North-Eastern States are indicated in **Annexure 16.1**.

16.7 **Watershed Development Fund:** A Watershed Development Fund (WDF) has been established at NABARD, with the objective of integrated watershed development in 100 priority districts in 18 States, through participatory approach. The total corpus of the WDF is Rs 200.00 crore which includes Rs 100.00 crore by NABARD and a matching contribution of Rs 100.00 crore by the Government of India.

16.8 The activities under the WDF are being taken up under the guidance of a High-Powered Steering Committee chaired by the Secretary, Department of Agriculture and Cooperation. Other representatives are from the Ministry of Agriculture, Ministry of Rural Development, Ministry of Finance (Banking Division), State Governments, NABARD and selected NGOs from different States.

16.9 Of the 18 States, 11 States viz. Andhra Pradesh, Gujarat, Karnataka, Tamil Nadu, Maharashtra, Rajasthan, West Bengal, Orissa, Himachal Pradesh, Uttar Pradesh and Jharkhand initially agreed to avail of a loan from the WDF and accordingly signed the MoU with NABARD. Subsequently however, four States viz. Rajasthan, Himachal

Pradesh, Jharkhand and Orissa withdrew from the WDF. Thus, effectively only seven States viz. Andhra Pradesh, Karnataka, Maharashtra, Gujarat, West Bengal, Uttar Pradesh and Tamil Nadu are participating in WDF programme.

- A total number of 427 projects (70 grant and 357 loan component) were sanctioned under Capacity Building Phase (CBP) with a grant assistance of Rs 21.13 crore covering an area of 39287.45 hectares. These projects will ultimately cover about 4.11 lakh hectares when they enter Full Implementation Phase (FIP).
- A total number of 234 projects (36 grant and 198 loan) were sanctioned with a grant assistance of Rs 2.23 crore for the preparation of Project Feasibility Reports.
- There are 139 projects that have entered the FIP (114 loan projects with a loan assistance of Rs 54.89 crore and 25 grant component projects with a grant assistance of Rs 13.25 crore).

**16.10 Watershed Development Council (WDC):** During the Tenth Plan, an amount of Rs 12.00 crore has been allocated to the WDC, out of which an amount of Rs 4.20 crore has been utilised upto 31 January 2007. During 2006-07, Rs 0.80 crore has been utilised upto 31 January 2007 as against the Budget Estimate of Rs 1.35 crore.

**16.11 Other Activities undertaken during 2006-07:** The Department of Agriculture and Cooperation in collaboration with the Department of Land Reforms, Ministry of Rural Development assigned a project entitled: 'Comprehensive Assessment of Watershed Programmes in India', to the International Crop Research Institute for Semi-Arid Tropics (ICRISAT), Hyderabad. The project is of two-year duration and the costs will be shared between the Department of Rural Development and the Department of Agriculture and Cooperation on 75:25 basis. The total cost of the study is Rs 1.59 crore, of which Department of Agriculture and Cooperation's share is Rs. 0.40 crore. The first installment of Rs 1.60 crore was released from the WDC funds to enable ICRISAT to initialise the project during 2006-07.

**16.12** Studies remaining out of the Impact Evaluation Studies of sample watersheds launched under the NWDPRRA during the Ninth Five-Year Plan assigned to various institutions during 2005-06, were completed during 2006-07.

**16.13** Mid-term evaluation studies of 97 sample watersheds launched under the NWDPRRA during the Tenth Five-Year Plan all over India were assigned to four Institutions. These studies are in progress.

**16.14** Financial assistance was given to the Central Soil Water Conservation Research & Training Institute (CSWCR&TI), Dehradun, for organising a conference on national resources management in collaboration with the Indian Association of Soil and Water Conservationists, Dehradun, and the Department of Soil Conservation and Watershed Development, Pune, at Pune, from 11<sup>th</sup> to 13<sup>th</sup> October 2006.

**16.15 Externally-aided Projects:** A number of externally-aided projects in the area of integrated watershed development are also being implemented during the Tenth Five-Year Plan. The Department is involved in the supervision, coordination and monitoring of these Projects. The funds for these Projects are directly released to the State Governments by the donor agencies. A brief description of such ongoing Projects under the Department during 2006-07 is given below:

**16.16 World Bank-assisted Integrated Watershed Management Projects:** The details of the watershed development projects assisted by the World Bank are given below:

**16.17 Karnataka Watershed Development Project:** The Karnataka Watershed Development Project (Sujala) was launched in September 2001 and is envisaged to be completed by March 2007. However, to make up for the initial delays, the World Bank has agreed in principle for two years extension i.e., up to 31 March 2009. The objective of the project is reducing poverty and improving the livelihood of the people living in watershed areas by increasing the production potential and natural resources base through strengthening of institutional arrangements. The total revised cost of the project is Rs 533.76 crore. An area of 2.40 lakh hectares has been developed at a cost of Rs 270.74 crore till December 2006.

**16.18 Uttarakhand Decentralised Watershed Development Project:** The Uttarakhand Decentralised Watershed Development Project was launched in September 2004, and is envisaged to be completed by March 2012. The project aims at improving the productive potential of natural resources and increasing income of rural inhabitants in selected watersheds through socially inclusive, institutionally and environmentally sustainable approaches. The project envisages participatory watershed development and management, enhancing livelihood opportunities and institutional strengthening. The total cost for this project is Rs 402.00 crore. An area of 11,000 hectares has been developed at a cost of Rs 36.87 crore till December 2006.

**16.19 Assam Agricultural Competitiveness Project:** The Assam Agricultural Competitiveness Project was launched in February 2005, and is envisaged to be completed by March 2010. The project aims at increasing the productivity and market access of targeted farmers and community groups to stimulate the growth of Assam's agricultural economy. The total cost of the project is Rs 1024.00 crore covering 23 districts for infrastructure development like rural roads, agricultural services, market chain development, and minor irrigation. As on 31 December 2006, an amount of Rs 11.50 crore has been incurred towards preparatory activities and development of rural roads and installation of 494 shallow tube wells.

**16.20 Himachal Pradesh Mid Himalayan Watershed Development Project:** The Mid Himalayan Watershed Development project became operative in October 2005, and will be completed by March 2013. The project aims at prevention of degradation of high-potential areas, prevention and protection of high bio-diversity, improving of accessibility to rural areas and productivity of livestock etc. The project envisages institutional

strengthening, watershed development and management, enhancing mountain livelihood opportunities, project management and coordination. The total cost of the project is Rs 365.00 crore. Till October 2006, an amount of Rs 144.97 crore has been spent for the development of 1475 hectares.

**16.21 National Rainfed Area Authority (NRAA):** The Government of India constituted the NRAA on 3 November 2006 to give focused attention to the problem of the rain-fed areas of the country. The Authority is an advisory, policy-making and monitoring body charged with the role of examining guidelines in various existing schemes and in the formulation of new schemes including all externally-aided projects in this area. Its mandate is wider than mere water conservation and covers all aspects of sustainable and holistic development of rain-fed areas, including appropriate farming and livelihood system approaches. It would also focus on issues pertaining to landless and marginal farmers, since they constitute the large majority of inhabitants of rain-fed areas.

16.22 The NRAA has a two-tier structure. The first tier is the Governing Board that will provide the necessary leadership and appropriate coordination in implementation of programmes. It will be chaired by the Union Agriculture Minister and co-chaired by the Union Rural Development Minister. The second tier would be the Executive Committee consisting of technical experts and representatives from stakeholder ministries. The Executive Committee would be headed by a full-time CEO and will also have five other full-time technical experts.

16.23 The mandate of the NRAA is as follows:

- To prepare a perspective plan, outlining the national strategy and road map for holistic and sustainable development of rain-fed farming areas.
- Evolve common guidelines for all schemes of different Ministries including Externally-Aided Projects for development of rain-fed /dry land farming systems.
- Coordinate and bring convergence within and among agricultural and wasteland development programmes being implemented in rain-fed areas of the country.
- Identify rain-fed areas in different States which need priority attention and prepare watershed development programmes for integrated natural resource management in consultation with States, focusing on multi-dimensional crop, livestock, horticulture, agri-pasture integrated systems and programmes for landless farming communities.
- Identify gaps in input supply, credit availability, dissemination of appropriate technology and other requirements relevant for rain-fed areas.
- Guide the implementing agencies on priority setting and monitor the specific interventions required.
- Develop Plans/Programmes for capacity building of Centre/State Government functionaries in rain-fed areas.

- Suggest modalities to strengthen National and State-Level Institutions concerned with rainfed/dryland areas and establish institutional linkages with prioritised watersheds.
- Monitor disbursement of rural credit/ insurance cover/ safety net programmes developed for rain-fed areas.
- Set the research agenda including a critical appraisal of ongoing programmes and promote diffusion of required knowledge for integrated farming in rain-fed areas to district and lower-level authorities.
- Evaluate the effectiveness of completed watersheds and concurrent evaluation of ongoing programmes.