

APPROVED ON-GOING PROJECTS

8

P-1: Water Erosion Appraisal in Different Agro-Ecological Regions

1.1: *Inventory and Database of Erosion Status Using Modern Tools and Procedures*

- 1 Landuse analysis by using remote sensing and GIS for resource conservation in shifting cultivated Eastern Ghats region of Orissa.
- 2 Delineation and characterization of Mahi ravines using remote sensing and GIS in terms of resource potential planning.

1.2: *On-site and Off-site Effect of Erosion*

- 3 Effectiveness of vegetative filter strips in preventing soil and nutrient losses.

1.3: *Soil Erosion Processes and Models*

- 4 Development and validation of runoff and erosion prediction models in different agro-ecological regions.
- 5 Erosion-productivity relationships for evaluating vulnerability and resiliency of soils under different agro-climatic regions of India.
- 6 Development of scalogram model based on soil parameters, landuse and topographic characteristics for estimation of sediment yield from small watersheds.
- 7 Modified soil erodibility K factor for the soil in the Bundelkhand region, India.

P-2: Conservation Measures for Sustainable Production Systems

2.1: *Resource Conservation Measures for Arable Lands*

- 8 Yield maximization and resource conservation through organic input management.
- 9 Evaluation of organic farming vis-à-vis inorganic farming for resource conservation and sustained productivity under prominent cropping system.
- 10 Impact of *okra*-maize intercropping on resource conservation and productivity.
- 11 Integrated rain water management for enhancing rain water productivity in maize based cropping system.
- 12 Evaluating productivity potential of bhimal (*Grewia optiva*) along with field crops.
- 13 Productivity enhancement in fruit and flower based two tier horticulture system through integrated nutrient management and mulching.
- 14 Resource conservation and sustainable crop production using bio-fertilizers and organics in degraded Shiwaliks.
- 15 Conservation tillage for resource management and higher production from Shiwaliks.
- 16 Intercropping and tillage practices for sustainable production under rainfed condition in Bundelkhand.
- 17 *In situ* moisture conservation practices under *aonla* based agro-forestry system for sustainable production in red soils of Bundelkhand.
- 18 Conserving resources and augmenting livelihood of small holders through multi-tier cropping systems in tribal dominant Eastern Ghats of Orissa.
- 19 Evaluating the different crop combinations for strip cropping in terms of soil, nutrient losses and their productivity in uplands of Eastern Ghats.
- 20 Resource conservation by alley cropping in shifting cultivated degraded lands of Eastern Ghat.
- 21 Green manuring for resource conservation, soil health and productivity in fallow mustard cropping sequence.
- 22 Techniques for establishment of tea on terrace riser in the Nilgiris.
- 23 Improvisation of terraces of farmers' fields in the Nilgiris.

- 24 Optimum tillage and organic manuring practices for crop production and resource conservation in the Nilgiris.
- 25 Integrated management of soil health for sustainable production in the Nilgiris.

2.2: Resource Conservation Measures for Non-Arable Lands

- 26 Evaluation of the agro-forestry systems for marginal lands in Doon valley.
- 27 Fuelwood and fodder production from densified plantations on old riverbed land.
- 28 Evaluating the performance and developing techniques for enhancing growth and seed yield of *Jatropha curcas* in degraded lands of sub-humid Himalayas.
- 29 Enhancement of guava productivity through canopy management and mulching in rainfed bouldery riverbed lands.
- 30 Evaluation of traditional minor millet based agro-forestry systems under recommended agri-silvicultural practices of North-Western Himalayas.
- 31 Effect of degradation on conservation and production attributes of *Sal* forests in Uttarakhand.
- 32 Evaluation of fruit species vis-à-vis conservation techniques for salt affected black soils of semi-arid tropic regions.
- 33 Study on effect of *in situ* moisture conservation measures on runoff, soil loss and yield of maize crop.
- 34 Peach based agri-horticulture land use system for degraded Shiwaliks.
- 35 Developing SALT (Sloping Agricultural Land Technology) for resource conservation and economic upliftment in Shiwaliks.
- 36 Evaluation of moisture conservation techniques for sustainable production of Tree Borne Oil Seeds (TBOS) in Bundelkhand.
- 37 Bio-engineering measures for resource conservation and management in red sloppy lateritic soils of Orissa.
- 38 Evaluation of different under utilized fruit species with varying inter-space managements in Chambal ravines.
- 39 Evaluation of promising oilseed tree species under silvi-pastoral system for rehabilitation of Chambal ravines.
- 40 Effectiveness of different bio-engineering measures in new tea plantation in the Nilgiris.
- 41 Enhancing productivity of non-arable ravine lands by plantation of *A. sapota* with intercropping systems.

P-3: Hydrological Behaviour of Watersheds for Conservation Planning

3.1: Rainfall, Runoff, Vegetation, Soil Characteristics and Management Practices

- 42 Hydrological behaviour of small watersheds and sustainability of production systems.
- 43 Testing of hydrological instruments.
- 44 Assessment of impact of climate change on hydrology and crop production in the selected watersheds.
- 45 Hydrological evaluation of recommended forest trees in Himalayan foothills.
- 46 Hydrological response to micro-catchments under different land uses with vegetation manipulation.
- 47 Analysis of climatic data for evolving drought indices towards planning sustainable cropping systems in Bundelkhand.
- 48 Hydrological implication of sequential alternation of land use covers in a ravinous catchment.
- 49 Design development and testing of simple and low cost continuous mechanical sediment yield sampler.
- 50 Hydrologic and economic evaluation of Bamboo plantations in gullied lands under major ravines of India.

3.2: Effect of Conservation Measures and Landuse on Ground Water Recharge

- 51 Design and development of site specific artificial groundwater recharge filters.

3.3: Water Harvesting

- 52 Integration of low cost water harvesting and micro irrigation for resource conservation and sustainable vegetable production in terraced lands in North Western Himalayas.
- 53 Hydrological evaluation of CBT in Himalayan foothills.
- 54 Estimation of water budget components for predominant land uses of south-eastern Rajasthan for conservation planning.

P-4: Rehabilitation of Areas Affected by Mass Erosion**4.1: Refinement of Technologies for Torrent Training, Landslide Control and Minespoils Rehabilitation**

- 55 To study the performance of special types of spurs through laboratory studies (in hydraulic flume).
- 56 Cost effective conservation measures for management of medium and deep ravinous lands.
- 57 Productive utilization of ravines through introduction of horticulture and improved planting materials.
- 58 Landslide characterization and management plan for the Nilgiris.

P-5: Participatory Integrated Watershed Management**5.1: Methodologies for Development of Watersheds and Decision Support Systems for Interventions**

- 59 Resource conservation and management in Netrenahalli watershed, Chitradurga district, Karnataka.

5.4: Farming System Approach

- 60 Evaluation of fish based Integrated Farming Systems in foothills and mid-hills of Himalayas.
- 61 Enhancement of livelihood security through sustainable farming systems and related farm enterprises in North-West Himalaya.
- 62 Multiple criteria decision for identifying suitable Integrated Farming Systems in different agro-ecological regions for optimizing resource conservation and productivity.

5.5: Watershed Technologies (Strategic Research)

- 63 Development of model watershed Iduhatti in the Nilgiris.

P-6: Socio-Economic Analysis and Policy Development for Watershed Management**6.1: Resource Economics**

- 64 Relative performance of watershed development projects under different institutional structures in semi-arid Karnataka and Andhra Pradesh.

6.2: Institute Village Linkage Programme for Technology Assessment and Refinement

- 65 Participatory dissemination and assessment of land and water management technologies for livelihood security in rainfed areas of north-western Himalayas under TDET scheme, Dept. of Land Resources, Ministry of rural Development.

6.3: Common Property Resource Management

- 66 Evaluation of institutional arrangements and impact of community based water storage structures in different agro-climatic zones of India.

P-7: Human Resource Development and Technology Transfer**7.1: Training Methodology, Need Assessment, Gender Neutrality and Evaluation**

- 67 Capacity building programmes for watershed management in India: Assessment and impact analysis.