APPROVED ON-GOING PROJECTS

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

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

1. Impacts of landuse changes on surface hydrology in Doon Valley through remote sensing and GIS approach.
2. Decision Support System (DSS) for identifying best management practices in erosion risk area.
3. Landuse analysis by using remote sensing and GIS for resource conservation in shifting cultivated eastern ghats region of Orissa.
4. Effect of slope and land uses on soil carbon stock and soil quality in the Nilgiris.
5. 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*

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

1.3: *Soil Erosion Processes and Models*

7. Erosion-productivity relationships for evaluating vulnerability and resiliency of soils under different agro-climatic regions of India.
8. Assessment of soil organic carbon in transit under erosion processes: A source or sink for atmospheric CO_2.

P-2: Conservation Measures for Sustainable Production Systems

2.1: *Resource Conservation Measures for Arable Lands*

9. Yield maximization and resource conservation through organic input management.
10. Evaluation of organic farming vis-à-vis inorganic farming for resource conservation and sustained productivity under prominent cropping system.
11. Impact of maize based intercropping on resource conservation and productivity.
12. Integrated rain water management for enhancing rain water productivity in maize based cropping system.
13. Evaluating productivity potential of bhimal (*Grewia optiva*) along with field crops.
14. Productivity enhancement in fruit and flower based two tier horticulture system through integrated nutrient management and mulching.
15. Canopy management in *Morus alba* for enhancing productivity and resource conservation.
16. Yield maximization and resource conservation through integrated nutrient management and tillage combinations in the ravines of the Yamuna river.
17. Performance of Tamarind near S&WC structures with different mulches in vertisols of SAT region.
18. Conservation tillage for resource management and higher production from Shiwaliks.
19. Adoption of potential and productivity of organic vis-à-vis conventional farming system under rainfed conditions of Shiwaliks region.
20. *In situ* moisture conservation practices under aonla based agro-forestry system for sustainable production in red soils of Bundelkhand.
21. Developing three tier strip farming system for sloppy uplands: A measure to cope up with monsoon vagaries and resource conservation in Bundelkhand region.
22. Evaluating the different crop combinations for strip cropping in terms of soil, nutrient losses and their productivity in uplands of Eastern Ghats.
23. Resource conservation by alley cropping in shifting cultivated degraded lands of Eastern Ghat.

24. Impact assessment of soil and water conservation measures and land use changes on sustainability of soil health under watershed development projects.
25. Techniques for establishment of tea on terrace riser in the Nilgiris.

2.2: *Resource Conservation Measures for Non-Arable Lands*

26. Fuelwood and fodder production from densified plantations on old riverbed land.
27. Evaluating the performance and developing techniques for enhancing growth and seed yield of *Jatropha curcas* in degraded lands of sub-humid Himalayas.
28. Enhancement of guava productivity through canopy management and mulching in rainfed bouldery riverbed lands.
29. Evaluation of traditional minor millet based agro-forestry systems under recommended agri-silvicultural practices of North-Western Himalayas.
30. Effect of degradation on conservation and production attributes of Sal forests in Uttarakhand.
31. Influence of aromatic grasses and tree management on soil moisture and health under silvo-aromatic grass systems on bouldery land of Doon Valley.
32. Efficacy of different soil and water conservation measures on bamboo productivity and resource conservation in Himalayan foothills.
33. Peach based agri-horticulture land use system for degraded Shiwaliks.
34. Developing SALT (Sloping Agricultural Land Technology) for resource conservation and economic upliftment in Shiwaliks.
35. Resource budgeting in agro-forestry for livelihood security by modifying WANulCAS model under Indian condition.
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. Performance evaluation of different oil yielding grasses in shifting cultivated degraded lands of Orissa.
39. Evaluation of different under utilized fruit species with varying inter-space managements in Chambal ravines.
40. Evaluation of promising oilseed tree species under silvi-pastoral system for rehabilitation of Chambal ravines.
41. Evaluation of carbon sequestration potential of different tree based production systems in South-eastern Rajasthan.
42. Effect of shade trees on productivity and soil health in rejuvenated tea plantations in Nilgiris.
43. 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*

44. Hydrological evaluation of recommended forest trees in Himalayan foothills.
45. Evaluation of hydrological behaviour and production potential of recommended landuse system / practices under different agro-ecological regions of India.
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. Enhancement in land productivity and livelihood security of small farmers of Nilgiris through multiple use of harvested water.
49. Hydrological implication of sequential alternation of land use covers in a ravinous catchment.
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. Conservation Bench Terrace (CBT) based integrated farming system 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. Evolving methodology for extraction of River Bed Material (RBM) from rivers for monitoring river morphology.
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. Field evaluation of design of trenches under different agro-climatic regions.

P-5: *Participatory Integrated Watershed Management*

5.1: *Methodologies for Development of Watersheds and Decision Support Systems for Interventions*

59. Development of a user friendly Decision Support System application for planning of watershed development project.
60. Resource conservation and management in Netrenahalli watershed, Chitradurga district, Karnataka.

5.4 : *Farming System Approach*

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.

6.3 : *Common Property Resource Management*

65. 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*

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