APPROVED ON-GOING PROJECTS

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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.

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

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

1.3: Soil Erosion Processes and Models

6. Erosion-productivity relationships for evaluating vulnerability and resiliency of soils under different agro-climatic regions of India.
7. Assessment of soil organic carbon in transit under erosion processes: A source or sink for atmospheric CO_2.
8. The assessment of soil erosion through re-distribution analysis of ^{137}Cs fallout in humid subtropical region of India.
9. Application of dynamic simulation models to establish erosion-productivity relationships and soil organic carbon sequestration potential for a future changing climate.
10. Effect of vegetative and mechanical measures on resource conservation in an indigenously developed hydraulic flume.

P-2: Conservation Measures for Sustainable Production Systems

2.1: Resource Conservation Measures for Arable Lands

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

24. Evaluating the different crop combinations for strip cropping in terms of soil, nutrient losses and their productivity in uplands of Eastern Ghats.
25. Resource conservation by alley cropping in shifting cultivated degraded lands of Eastern Ghat.
26. Impact assessment of soil and water conservation measures and land use changes on sustainability of soil health under watershed development projects.

2.2: Resource Conservation Measures for Non-Arable Lands

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. Canopy management in *Morus alba* for enhancing productivity and resource conservation.
34. Development and characterization of quality planting material of important MPT's for degraded lands of North-West Himalayas.
35. Peach based agri-horticulture land use system for degraded Shiwaliks.
36. Developing SALT (Sloping Agricultural Land Technology) for resource conservation and economic upliftment in Shiwaliks.
37. Resource budgeting in agro-forestry for livelihood security by applying WANulCAS model under Indian condition.
38. Evaluation of moisture conservation techniques for sustainable production of Tree Borne Oil Seeds (TBOS) in Bundelkhand.
39. Bio-engineering measures for resource conservation and management in red sloppy lateritic soils of Orissa.
40. Performance evaluation of different oil yielding grasses in shifting cultivated degraded lands of Orissa.
41. Evaluation of different underutilized fruit species with varying inter-space managements in Chambal ravines.
42. Evaluation of promising oilseed tree species under silvi-pastoral system for rehabilitation of Chambal ravines.
43. Evaluation of carbon sequestration potential of different tree based production systems in South-eastern Rajasthan.
44. Effect of shade trees on productivity and soil health in rejuvenated tea plantations in Nilgiris.
45. Enhancing productivity of 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

46. Standardization of runoff and peak flow parameters for different soil and water conservation structures under Indian condition.
47. Hydrological evaluation of recommended forest trees in Himalayan foothills.
48. Evaluation of hydrological behaviour and production potential of recommended landuse system / practices under different agro-ecological regions of India.

49. Enhancement in land productivity and livelihood security of small farmers of Nilgiris through multiple use of harvested water.
50. Hydrological implication of sequential alternation of land use covers in a ravinous catchment.
51. 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

52. Design and development of site specific artificial groundwater recharge filters.

3.3: Water Harvesting

53. Conservation Bench Terrace (CBT) based integrated farming system in Himalayan foothills.
54. Water budgeting of a ravinous watershed pond for optimum crop planning under semi-arid region.
55. 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

56. Evolving methodology for extraction of River Bed Material (RBM) from rivers for monitoring river morphology.
57. Cost effective conservation measures for management of medium and deep ravinous lands.
58. Productive utilization of ravines through introduction of horticulture and improved planting materials.
59. Prototype field study on application of potentially important jute geo-textiles for hill slope stabilization.
60. 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

61. Development of a user friendly Decision Support System application for planning of watershed development project.
62. Developing methodological framework for delineating and characterization of Chambal and Yammuna ravines.

5.4 : Farming System Approach

63. Multiple criteria decision for identifying suitable Integrated Farming Systems in different agro-ecological regions for optimizing resource conservation and productivity.

P-6: Socio-Economic Analysis and Policy Development for Watershed Management

6.3 : Common Property Resource Management

64. 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

7.3: Participatory Approaches, Dissemination of Technology and Adoption

65. Role of soil and water conservation technologies for climate resilient agriculture in Himalayan ecosystem - An action research.
66. Post-adoption behaviour of farmers towards soil and water conservation technologies of watershed management.
67. Ensuring sustainable agricultural development and livelihood security in lower Shiwalik range of Uttarakhand.