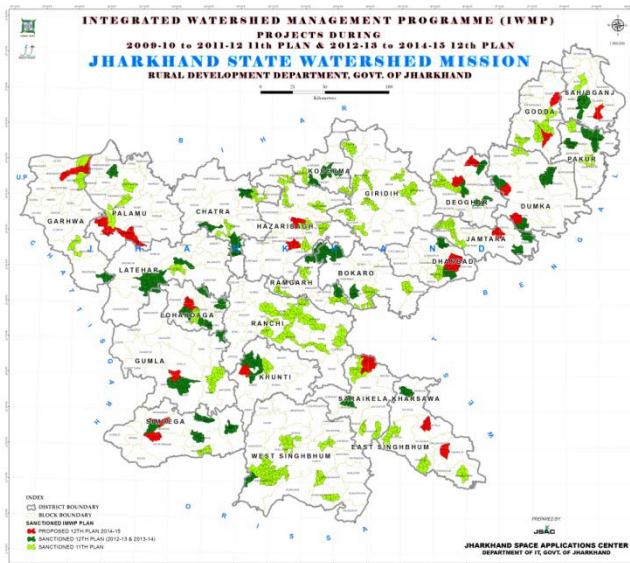


## WATERSHED MANAGEMENT INFORMATION SYSTEM FOR JHARKHAND RURAL DEVELOPMENT (WMIS-JRD)

A watershed is an ideal unit for management of natural resources like land and water for mitigation of the impact of natural disasters for achieving sustainable development. The significant factors for the planning and development of a watershed



are its physiographic, drainage, geomorphology, soil, land use/ land cover and available water resources. Remote sensing and GIS are the most advanced tools for watershed development and management which includes studies on prioritization of micro-watersheds for development. The project aims at identification of District/Block level micro watershed clusters based on IWMP guidelines provided by GOI for prioritizing the watershed or micro watersheds in state. The various thematic geodatabase like land use, soil, geomorphology, geology,

ground water prospect along with land degradation units like soil erosion, gullied area and ravines lands are identified for the micro watershed prioritization based on ridge to valley concept using the advanced technologies Remote Sensing and GIS techniques for providing action plan in land and water resources development.

Jharkhand Space Application Center (JSAC) is nodal agency in the state and successfully running a project entitled “*Watershed Management Information System For Jharkhand Rural Development (WMIS-JRD)*” funded by Rural Development Department, Govt. of Jharkhand and Jharkhand State Watershed Mission (JSWM) – State Level Nodal Agency (SLNA) for providing Remote Sensing and GIS support in the field of sustainable watershed management practices in Jharkhand State. Total budget of project is 408.06 lakhs. As per the MoU the objective decided in the project is to

- Preparation of State Perspective and Strategic Planning (SPSP) for watershed development in Jharkhand State.
- Preparation of Preliminary Project Report (PPR) for proposed micro-watershed Clusters sanctioned to PIA by JSWM-SLAN in Jharkhand.
- Preparation of Proposed Activity Maps for Water and Land Resources Development Planning using available GIS Resource Layers at JSAC (1:50k).

- Preparation of GIS Natural Resources Layers on 1:10,000 Scale (Landuse, Drainage, Transport).
- Digital conversion/Digitization, attributing and geo-referencing of village cadastral maps of IWMP sanctioned Projects.
- Preparation of Plot wise Proposed Action plan (LRDP, WRDP & Livelihood Activities) on Digitized Cadastral maps as recorded in DPR.
- Preparation of Cluster wise maps and Micro-watershed wise maps of all the Natural Resources Layers for Detailed Project Report (DPR).
- Change Detection Analysis of sanctioned projects.
- All the GIS resources information's generated are made available on WMISJRD-WebGIS Application.

**Activities decided in Project MoU (after Midcourse Correction)**

- Generation of GIS Layer (Soils, Geology, Geomorphology, Ground Water Prospects, Slope, Drainage, Land Use/Land Cover, Road, Habitation, Administration Boundary), Refinement & Customization of Software on 1:50,000 scale
- Characterisation, Priortization of Watersheds and Action Plan Generation on 1:50,000 Scale
- Scanning, Mosaicing, Georeferencing, Digitization and Attributing of Plot Number of Village Cadastral Sheets and Data Entry of Plot Details
- satellite data processing, Land use - Land cover mapping, Land degradation Mapping on 1:10,000 Scale
- Geology Mapping, Geomorphology Mapping, Geological Structure & Ground Water Prospect Zone Mapping with Buffer creation on 1:10,000 Scale
- Satellite Data acquisition (IRS-P6, LISS-IV & Cartosat-I) for 1:10,000 Scale Mapping
- Change Detection Analysis/Monitoring the Progress/ Assessing and Mapping of Existing & Suggested Water harvesting Structure Mapping on 1:10,000 Scale

Objectives in this project is to bridge coordination between Jharkhand Space Application Center (JSAC), Department of Information Technology & e-Governance, Government of Jharkhand with Jharkhand Watershed Mission (JSWM)-State Level Nodal Agency (SLNA), Rural Development Department, Govt. of Jharkhand for successful implementation of Integrated Watershed Management Programme (IWMP) in Jharkhand in the field of Remote Sensing and GIS.

The following major deliverable activities are:

- Preparation of State Perspective and Strategic Planning (SPSP) for watershed development in Jharkhand State.

- Preparation of Preliminary Project Report (PPR) for proposed micro-watershed Clusters based projects in Jharkhand.
- Digital conversion/Digitization, attributing and geo-referencing of village cadastral maps.
- Preparation of various natural resources layers like Land use and Land cover, Drainage/Streams Network, Road Network, Railway Network, Geomorphology, Ground Water Prospect, Soil, Slope map and Proposed plot wise Action plan information (land resource and water resources Development plans) mapping on 1:10,000 Scale using remote sensing satellite imagery (LISS-IV+Cartosat-1) and GIS in preparation of Detailed Project Report (DPR).
- Preparation of micro-watershed wise composed Maps of all the resources layers prepared on 1:10,000 scales are overlaid on digitized village cadastral sheets.

In Jharkhand state sanctioned IWMP micro watershed clusters (each approximately 5000 ha)/projects in Batch-1(2009-10) 20 clusters, in Batch-2 (2010-11) is 22 clusters, Batch-3 (2011-12) is 45 clusters, Batch-4 (2012-13) is 30 clusters, Batch-5 (2013-14) is 27 clusters and in Batch-6 (2014-15) is 30 clusters. These projects are sanctioned to different PIA's from Forest Department, Soil conservation Department, Drinking water and Sanitation Department, Watershed Committee cum Data Center (WCDC), Various renowned NGO's in Jharkhand.

At present JSAC has completed the above activities in preparation of DPR's for IWMP clusters of Batch-1 and Batch-2 and submitted to JSWM-SLNA, further we are progressing in preparation of various resources layers for the remaining micro-watershed clusters and providing continuous support in the field of RS & GIS in watershed development activities in Jharkhand state.