

15. Monitoring of Integrated Watershed Management Programmes using Geospatial Technologies

Aim

1. To Provide baseline satellite images for all watersheds
2. To Provide GIS platform and software tools for plan preparation
3. To Enable online Monitoring & Evaluation of all identified watersheds
4. To Provide periodical satellite images as part of monitoring & highlight temporal changes

Scope

Significant large-scale public investment has been made for implementing national-scale programs such as Integrated Watershed Management Program (IWMP) targeting drought proofing, soil conservation, low-cost water harvesting, and groundwater recharge in dryland regions. Remote sensing EO data and Geographical Information Systems help to investigate multiple aspects of the watershed in numerous ways. Geospatial technology is effectively used for watershed management and monitoring activities to ensure watershed development programs' long-term effectiveness and success.

NRSC has been enabling good governance in the Integrated Watershed Monitoring Project of the Department of Land Resources, Ministry of Rural Development, using the EO data for the Multi-temporal Monitoring of Watershed Project. Srishti (<https://bhuvan-app1.nrsc.gov.in/iwmp/>) corresponds to the landscape level view of the entire area through remote sensing images, presented as greened up expanse, Drishti supports through geo-tagged vision uploading field reality. Field inventory of all the completed activities is recorded and reported using the customized mobile app and till date about 17 Lakh geotag points have been uploaded using Drishti App. around 30,000 satellite images of different time series have been hosted on Srishti portal. Impacts at project level in terms of detecting the presence of asset using high resolution remote sensing data coupled with desirable land cover changes observed every year are served for various functionaries. This information enables proper understanding of the changes implemented through state initiative.

Bhuvan provides range of geo-information based products and services for various natural resource management needs. In addition, android based smart phone Application named DRISHTI has also been developed. Android application has tools to capture photo evidence with geo-location and user updated information so as to send it to Web GIS server.

Current constraints

Non availability of High resolution data for precise yearly (anniversary dates) monitoring of the watershed interventions. Availability and cloud free satellite data.

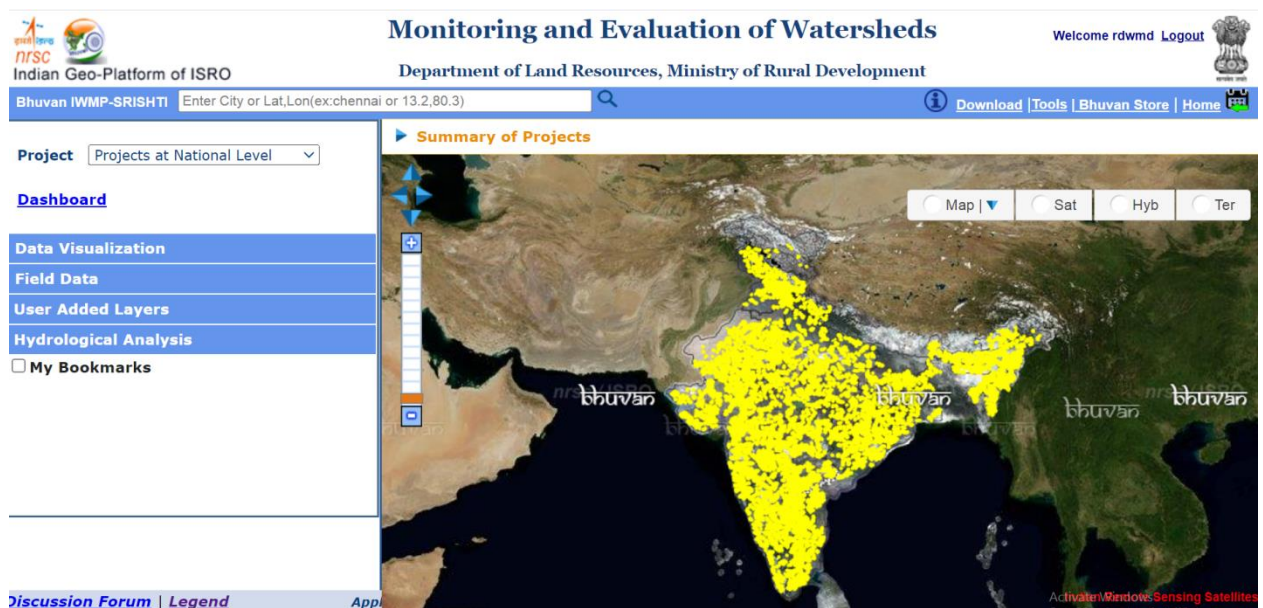
Expected outcome

1. National level monitoring of watershed interventions and impacts using time series (5 year) high resolution data
2. Value addition to operational handling of IWMP implementation through increased transparency and accountability about works done
3. Ease of applying geospatial technology and mobile based inventory for watershed development

Realizing the immense value addition by this project next phase monitoring awarded to NRSC

Time Frame

2015 to 2023



IWMP Bhuvan Landing Page



The impact of interventions by Watershed development activities as observed using a high-resolution multi-temporal image sequence. Check dams, Water Harvesting Structures, Horticulture Plantations, and forestry species are analyzed.