

1. Project Title: Integrated watershed development planning for Bagra Watershed of Meghalaya (including Cherapunjee)- a RS & GIS based approach.

Scope & Objectives: Watershed development refers to the conservation, regeneration and the judicious use of all the resources _ natural (like land, water, plants, animal) and human within the watershed area. Watershed Management tries to bring about the best possible balance in the environment between natural resources. Bagra is a watershed in "South flowing drainage of Meghalaya" catchment under Brahmaputra basin. The uniqueness of the watershed is in spite of the presence of Charapunjee 'the place receiving highest rainfall in the world' there is shortage of drinking water, poor in ground water prospect. As viewed from satellite image 40% area of the watershed is barren. The watershed have moderate to steep slope area. So, physiography of the watershed is prone to soil erosion. The intensive rainfall makes the watershed more vulnerable to soil erosion. Appropriate combination of engineering and non-engineering soil conservation measures can resist soil erosion up to a great extent which in turn takes an important role in ground water recharging.

The objectives of the study are:

- Characterization of micro watershed
- Prioritization of micro-watershed.
- Alternate land use planning for barren areas to resist soil erosion.
- Find out suitable sites for rain water harvesting for the purpose of irrigation, plantations including horticulture, fisheries etc.
- Find out sites suitable structural measures (Trenching, Bunding, Hedging & Terracing etc.) to restrict soil erosion for barren high lands as well as artificial ground water recharging
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2. Centre /Unit : North Eastern Space Applications Centre (NESAC)

3. Funding Agency : EOAM/DOS

4. Study area: Bagra Watershed is situated in southern part of East Garo Hills District of Meghalaya. The watershed is bordering to Bangladesh.

5. Methodology: The prioritization of micro-watershed will be done by analyzing topographic factors like land use land cover, slope and drainage density etc. in GIS environment. Similarly, the suitable sites and the alignment of the rain water harvesting structures and runoff velocity retarding structures can be decided by analyzing topographic factors in GIS. Again, incorporating soil type and climatic factors to topographic factors a sustainable alternate land use plane can be suggest.

6. Data required: Cartosat – I stereo pair, Either IRS-P6 LISS IV or LISS III (Preferably IRS-P6 LISS IV)

7. Status: On going

8. Utilization: The output of the project will be used by Water resources and Soil Conservation Department of Meghalaya

9. Duration: April 2010-Sept, 2011.