

1. Project Title: Assessment of Irrigation Potential Created in AIBP Funded Irrigation Projects in India Using Cartosat Satellite Data [Dhansiri (Major) Irrigation Project Assam]

2. Scope and Objectives Assessment of irrigation potential created up to March / April 2007 using Cartosat-1 / Cartosat 2 high resolution satellite data through identification and mapping of the existing irrigation network in the selected irrigation projects covered under AIBP. Specific objectives are:

- Inventory and Mapping of Irrigation Infrastructure consisting of canal network, cross drainage and other related irrigation structures
- Assessment of Irrigation Potential (I.P) created as on March / April 2007
- Identification of gap / critical areas in I.P creation

The present report deals with Cartosat satellite data based Irrigation Potential assessment in Dhansiri (Major), Assam state.

3. Centre: North Eastern Space applications Centre, Umiam, Meghalaya.

4. Funding Agency: NRSC.

5. Study Area: Dhansiri Irrigation Project is situated in Udalguri District of Assam on the river Dhansiri located near the tri-junction of Assam, Arunachal Pradesh and Bhutan envisages a diversion barrage and canal system to irrigate 83,366 thousand ha annually at an irrigation intensity of about 200%. The location of the barrage is at 92° 07' N longitude and 26° 53' E latitude.

6. Brief Methodology: Identification and mapping of existing irrigation network with Main canal/Branch canal/Distributaries/Minors & Sub-minors was done from orthorectified Cartosat-I image. In addition to the canal network, irrigation and other structures including cross drainage structures viz. aqueducts, super passages, siphons, Depressed Hume Pipe culverts, chutes, drops, road/cart/foot bridges etc. were identified and marked on to the digital database. The above irrigation infrastructure was identified and mapped using the image interpretation key. Then, random ground checks were made for verification and confirmation of image interpretation details.

7. Data Used: Cartosat I data of 2007

Ancillary Data Used-

- Index map of the Project area.
- Index map showing distributaries.
- Tree diagrams (showing chainages and lengths of all the branch canals, distributaries, laterals and sub-laterals along with location of irrigation structures) of canal networks.

8. Status of the Project Completed.

9. Results of the project: The irrigation potential was assessed using the irrigation infrastructure derived from the satellite data. The details of ICA, proposed irrigation potential, field reported & satellite based irrigation potential created in the project are given in Table-1. The assessed irrigation potential created upto sub-minor level was shown in the above table. Wherever the canal and their off-take canals were existing and their lengths are comparable to the proposed without any pending cross-drainage/irrigation structures, they were assessed to have created the proposed irrigation potential. Wherever canal lengths are shorter than the proposed, irrigation potential has been calculated in proportionate to its length. Wherever canal discontinuity is noticed, irrigation potential has been computed up to the discontinuity point from the main canal (as water does not flow further due to discontinuity). Hence, as per the satellite data, irrigation potential created is found to be 14209.98 ha out of 26,365 ha. Following figure shows the map of irrigation infrastructure and irrigation potential created in Dhansiri project.

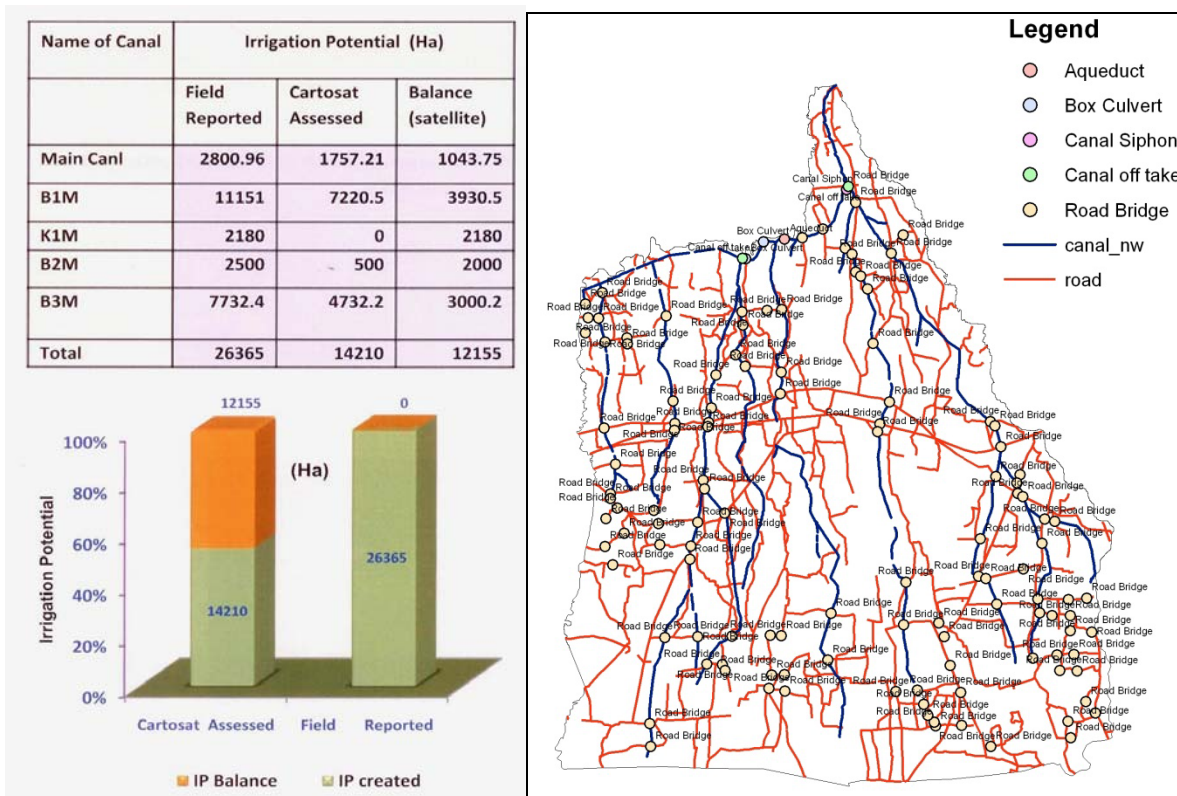


Fig. Map showing irrigation infrastructure and irrigation potential in Dhansiri (Major) project, Assam.

10. Utilization: The output of the project will be utilized by Central Water Commission, govt. of India for better monitoring of progress of AIBP funded irrigation schemes.

11. Durations: 3 months