

ORSAC Efficiently Sanitizing Irrigation Data with the help of ArcGIS

Client

Odisha Space Applications Centre (ORSAC)

Industry

Water Resources

Organization Profile

Odisha Space Applications Centre (ORSAC) is the nodal agency of the State in providing Remote Sensing, GIS, GPS, and SATCOM applications solutions to all Government Departments, Offices, and Agencies of Odisha. The Centre is involved in the development of geodatabase creation for natural resources, photogrammetry solutions, map making, land use management, and mobile & web GIS application development. ORSAC has indigenously developed more than 30 applications across various domains such as tourism, agriculture, urban, mining, forestry, climate change, etc.

Website

www.odishairrigation.gov.in

Project

Odisha Irrigation Information System (ODIIS)

Highlights

- Odisha Irrigation Information System (ODIIS) is a web GIS portal used for sanitizing the data on cultivated and irrigated areas of the State on the backdrop of cadastral information.
- The unified GIS system provides a common platform for the exchange of information between different departments, thereby enhancing collaboration between different stakeholders.
- The System facilitates more informed decision-making.

Project Summary

With the intent to establish a common and effective system for cultivated and irrigated area data collection, collation, storage, and dissemination, the Department of Water Resources, Government of Odisha decided to develop the Odisha Irrigation Information System (ODIIS). ODIIS is a web GIS portal used for sanitizing data on cultivated and irrigated areas of the State and hosted on WebGIS Platform of Esri India.

Challenges

Traditionally, there were physical paper copies of all geographical data regarding irrigated areas and irrigation networks in the state prepared during different periods by various departments/organizations like Water Resources, Panchayati Raj, Agriculture, SC & ST department, etc. These datasets were not accurate and mostly with outdated information. There was no interdepartmental coordination. A general lack of adequate data collection, collation, standardization, storage, and dissemination persisted across different departments, leading to the creation of incorrect reports and statistics.

Solution

To overcome the above challenges, ORSAC decided to generate a common standard database of cultivated and irrigated areas by using Remote Sensing and GIS technologies. Using Esri India's Platform, ORSAC developed the Odisha Irrigation Information System (ODIIS), which is a web GIS portal used for sanitizing the data on cultivated and irrigated areas of the State on the backdrop of cadastral information.

The project was divided into two phases:

Phase I – Data Sanitization and Web Portal Development

Phase II – Asset Database of canal networks and major/medium/minor projects

The project was completed within 3 months, including deployment of the portal for official use by the Department.

ODIIS includes data from several departments, namely:

- Department of Water Resources, (Irrigation Department-Major, Medium, Minor, Creek; Watershed Mission, OLIC and Mega Lift)
- Department of Agriculture (Jalanidhi - I, OAIC Jalanidhi-II, Horticulture)

- Department of SC/ST (ITDA)
- Department of Panchayati Raj (DRDA /Block)

Data from these departments are collected and hosted on a single GIS database.

With the help of the solution, ORSAC was able to establish the State's first centralized site for all irrigation-related data and applications.

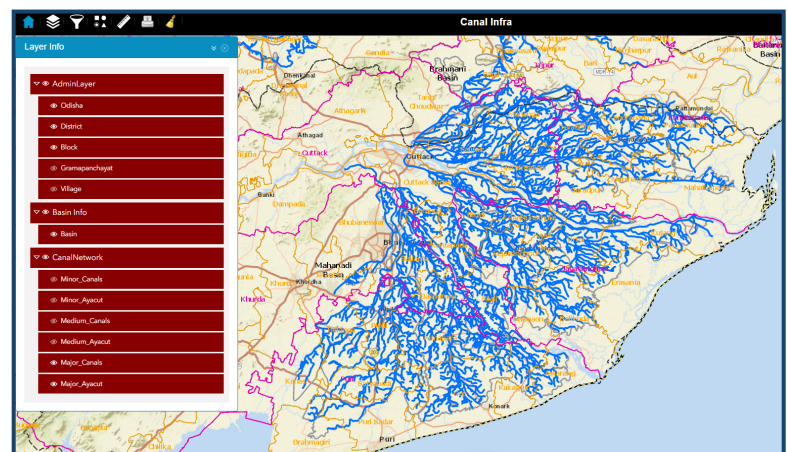
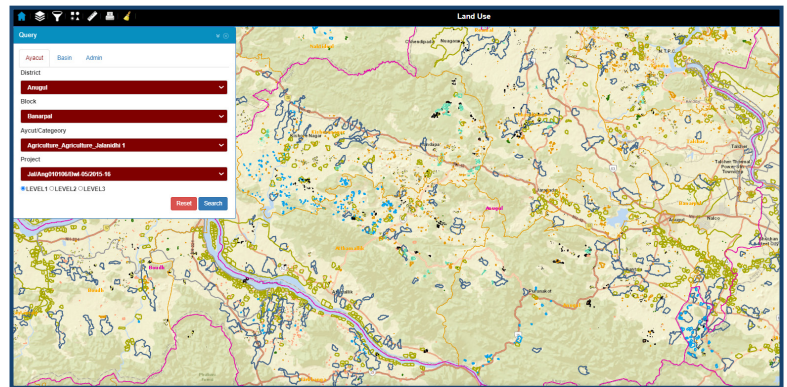
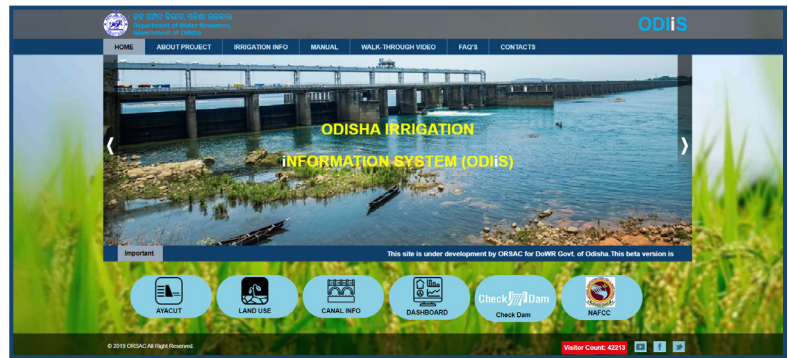
ODIIS constitutes several modules:

- **Ayacut Info Service** enables the user to query information about Ayacuts of any department or organization by district/block-wise, river basin wise, and as per department ownership. All ayacut and scheme implemented info of 11 agencies of 5 departments are hosted in the web portal in query-based modules.
- **Land use Info Service** provides information about land utilization in Ayacuts and the extension of cultivable lands. The GIS portal also provides information on the extent of cultivable land for all 314 blocks as interpreted from high-resolution satellite data.
- **Canal Info Service** provides Georeferenced canal network map as interpreted from high-resolution image along with all its attribute information. The portal is designed to provide information on the extent of the canal up to the tail end and coverage of revenue plots.

Benefits

11 organizations across 5 different departments provided 2.3 lakh maps along with Excel data for digitization. Using ArcGIS, this data was scanned, coded, converted to digital format, and integrated with orthorectified image-based revenue cadastral maps. 20GB of cadastral maps were produced at a 1:4000 scale.

The unified GIS system provides a common platform for the exchange of information between different departments, thereby enhancing collaboration between different stakeholders. This also leads to more informed decision-making.



“ORSAC is one of the leading organizations and Nodal Centre for GIS mapping for the State of Odisha. In line with our reputation for using cutting-edge technologies in e-Governance, we converted our extensive paper maps and land data to digital records. Being seasoned users for the past 25 years of ArcGIS software, we knew it was the best option to not only speed up the process of digitizing and georeferencing our massive map collections but also turn this data into useful apps that all stakeholders could access via our GIS portal. The launch of our portal was expedited significantly by the highly customizable and user-friendly web development environment and the ease of connectivity between ArcGIS desktop software, mobile data collection and integration, and web solutions.”

- Mr. Manoj Kumar Sanabada, Scientist 'E', ORSAC