

# Supporting Local Planning Initiatives in Karnataka with ERDAS APOLLO

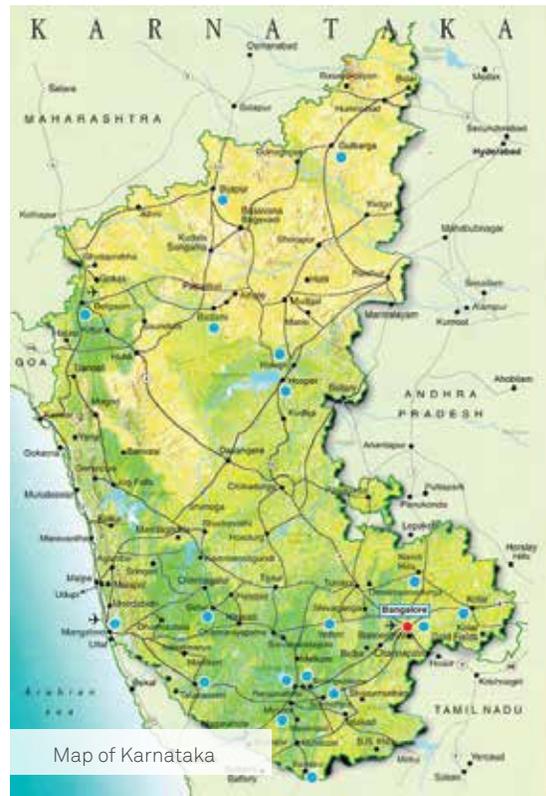


ERDAS APOLLO is a powerful catalog that enables the centralization of rich, geospatial metadata and complex searches of assets.

**Kaushik Chakraborty, Vice President,  
Asia Pacific, Geospatial Products**

The Karnataka State Council for Science and Technology (KSCST) was established in 1975 with the goal to improve the quality of life for impoverished populations in Karnataka, a state in the southern part of India. The Council seeks to encourage cooperation between various government organizations and research institutions that endeavor to relieve rural unemployment and poverty in the state.

The Council brings together government administrators, district level officers, scientists, and technologists who share the common goal of developing cost-effective, sustainable technologies and programs supporting economy, ecology, and human populations in the state of Karnataka. This was the first council of its kind in the country and serves as a role model for establishing state councils across India.



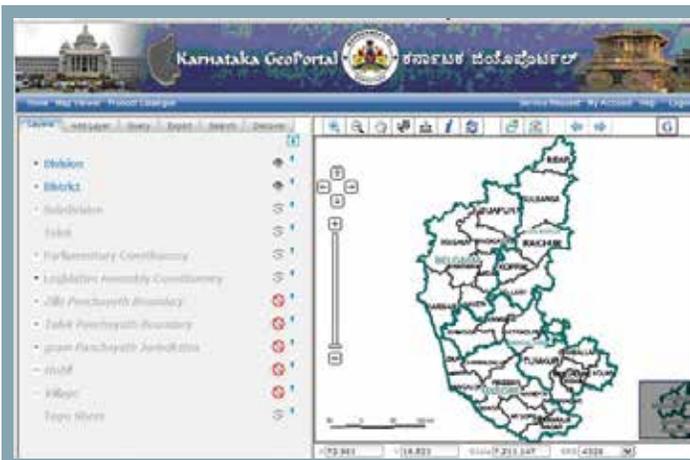
Map of Karnataka

Over the last 35 years, the Council has completed several projects in various sectors including energy, environment, housing, agriculture, health, water, and information and resource management. Success stories include unique projects such as energy planning to support cooking and lighting, a house numbering system for Bangalore city, rainwater harvesting and improvements to hand pumps for drinking water wells, and more.

## EMPOWERING LOCAL LEVEL PLANNING

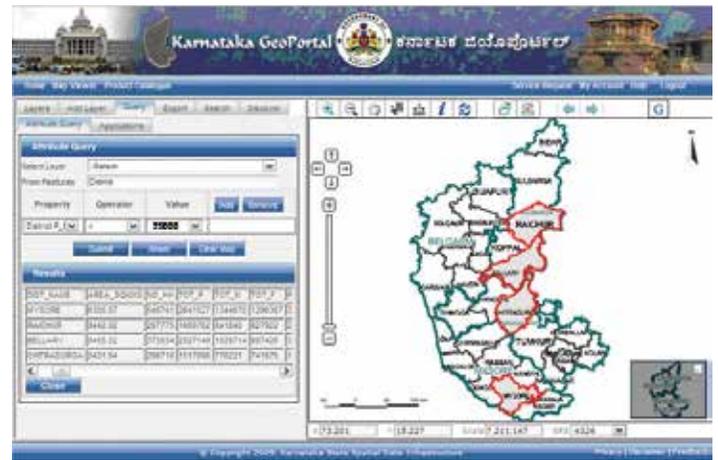
Over the years, the worldwide trend for planning and decision-making has begun to move from a macro level to micro (or local) level planning, and this is the case in Karnataka. The state of Karnataka is composed of 29 districts, with each district broken down into sub-districts (known as 'taluks'), and villages within the taluks. The Council recognized that inventory and availability of both spatial and non-spatial data would be crucial to local planning across Karnataka, and thus defined the need for a comprehensive data management system for easy access of data and information.

In 1992, the Karnataka Natural Resources Data Management System (NRDMS) was established to promote the use of spatial data management and analysis in local area planning. District NRDMS centers were established in each state district, tasked with empowering local communities to make informed decisions in local-level planning initiatives. NRDMS centers provide custom applications, value-added information, training, and support to planners and administrators in local governments.



Karnataka GeoPortal Map Viewer

- Displays state division and district boundaries by default
- Layer tab displays list of layers that can be made visible at various map scales
- User has ability to switch layers on and off
- Map displays include overview and Google map layer



The KSSDI project, with OGC compliant ERDAS APOLLO, manages geospatial data across multiple departments or offices. It serves as a core component of the spatial data infrastructure at KSSDI, and is responsible for securely cataloging all of the state's geospatial data and delivering it over the web via web services, including OGC-compliant WMS, WFS, and WCS. Web services are made available to a custom front end, or may also be accessed via Universal Resource Locator (URL) into major geospatial software applications.

"The Geo Portal Map Viewer application enables our KSSDI users to consume OGC-compliant Portal services as well as other data web services," said Hemanth Kumar.

Existing business systems, including one that enables users to request publishing or download of data, were integrated with the portal. On the back-end, KSSDI has also implemented an Oracle-based RDBMS, along with a security module and a mail server. These systems have also been closely integrated with Portal to support the Clearinghouse business processes.

## GEOPORTAL AND CLEARINGHOUSE

District NRDMS centers initially provided geospatial services to users through independent systems. This stovepipe method meant that data that could not easily be shared between other systems within the state. Recognizing the power of centralization, the Karnataka State Spatial Data Infrastructure (KSSDI) was planned as a joint project between NRDMS and the government of Karnataka to be an Internet-based geospatial data directory for the entire state.

Mr. H. Hemanth Kumar is the lead Project Investigator at NRDMS. "The goal is to implement a centralized hub and single-window access mechanism to assist users discovering geospatial datasets," said Kumar. "This ultimately will be immensely useful in local planning initiatives across the state." This gateway will also allow for various data generating agencies to share information across government organizations, scientific organizations, and industries.

Specifically, the project sought to create a web-based geoportals, implementing Open Geospatial Consortium (OGC®) and International Organization for Standardization (ISO) standards; and a clearinghouse for spatial data generated by various agencies of the government of Karnataka.

The KSSDI project required a solution to catalog vast stores of distributed geospatial data and make this data available via OGC compliant web services. The portal enables an organization to describe, catalog, search, discover, and securely disseminate massive volumes of data. KSSDI implements Standard OGC services including comprehensive Web Mapping Service (WMS), Web Coverage Service (WCS), Catalog Service for the Web (CS-W), Web Feature Service (WFS), Web Map Context (WMC), Web Processing Service (WPS), and ISO 19115/19139 metadata standards.



Karnataka Geoportal Launch at NSDI-9 Conference, Pune, India by Shri Prithviraj Chauhan, Hon'ble Minister for Science & Technology, Govt. of India

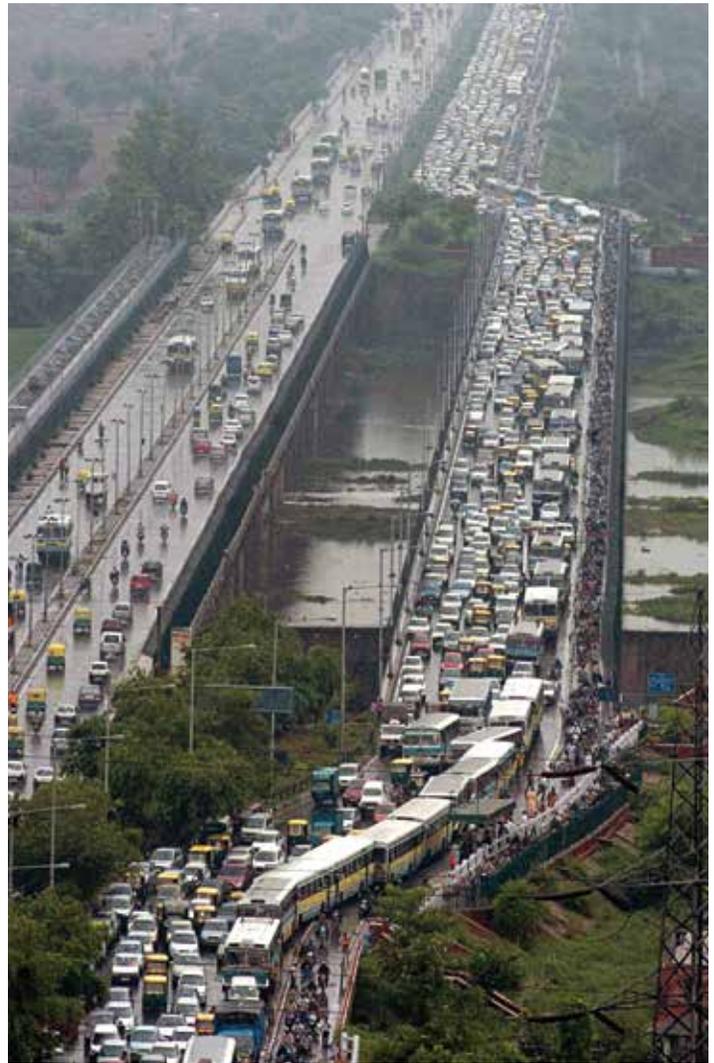
“ERDAS APOLLO is a powerful catalog that enables the centralization of rich, geospatial metadata and complex searches of assets,” said Kaushik Chakraborty, Vice President, Asia Pacific, Geospatial Products. “A host of standard OGC web services are implemented as the primary use case for accessing data, and the solution supports delivery into both custom and well-known front-end clients.”

## PROJECT STATUS

The first phase of the KSSDI project is already underway, with user acceptance testing in progress. Clearinghouse data published includes spatial data with attributes for political and administrative boundaries, state geography, demography, agriculture, economy, resources, and infrastructure. The plan is to publish both raster and vector data, but in the beginning the majority of available data will be vectors stored and served from Oracle®. For imagery provision, the KSSDI will initially be supported by integration of Google Maps into the custom ERDAS APOLLO front-end.

“The Karnataka NRDMS program is a role model for all other States,” adds Kumar. “For the first time in the country, spatial data for decision-making has been institutionalized. Decision makers have been extensively using NRDMS centers for geospatial services.” In the future, the goal is to extend the site to support online data sales, which will ultimately contribute to state revenue generation.

For more information on the NRDMS, please visit <http://kscst.org.in/nrdms.html>.



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