

# **GEO-METADATA STRUCTURE OF GIS FOR ENVIRONMENTAL MANAGEMENT IN CAM RANH BAY, VIETNAM**

Ngo Manh Tien, Phan Minh Thu, Bui Hong Long, Nguyen Huu Huan  
Institute of Oceanography

## **ABSTRACT**

*Geo-metadata of GIS plays an important role of environmental management. The geo-metadata can provide information to managers and users as well as supports the analysis results, which target to specific managing objectives of environment in marine and coastal regions. Therefore, the good designing and building geo-metadata structure contributes to the best practices of environmental management and integrated coastal zone management. This paper discusses about the structure of geo-metadata in GIS, including its components (metadata, input and output modules, spatial analysis and advantage module of environmental management, such as estimation of risk assessment, environmental carrying capacity) and decentralized use to admin, managers, and users. Based on information collected in Cam Ranh Bay, a GIS geo-metadata was built with the environmental and socio-economic data of maps, database, charts, textual documents and non-geographic data, and was controlled on the map window dot.net (using opening sources). Finally, some assignments of environmental assessment, for example, resulted for economic development and environmental prevention in Cam Ranh Bay.*

# **BUILDING A WATER RESOURCES INFORMATION SYSTEM IN BINH THUAN PROVINCE, VIETNAM**

Dao Minh Tam

Geomatics Center, Vietnam National University, Ho Chi Minh City

Luong Sinh

Communication and Information Technology Center, Department of Information and Communications, Binh Thuan Province

Le Van Trung

Ho Chi Minh City University of Technology, Vietnam National University, Ho Chi Minh City

## **ABSTRACT**

*Water is an extremely important natural resource, a decisive factor for the existence and sustainable development of a country. In recent years, the rapid increase in industrialization, urbanization, and population growth has impacted heavily on the water resources in many local areas in Vietnam. In Binh Thuan province, pollution of water resources is taking place due to many different factors, such as domestic wastewater, solid wastes, industrial wastes and agricultural wastes. However, water resources management in Binh Thuan province has been limited and has not been given adequate attention. Water resources data and information are fragmented and scattered across various ministries and sectors in different forms that did not follow a data content standard for the data itself. Therefore, building a water resources information system is very necessary.*

*This paper provides results of the water resources information system that has been designed and implemented to serve for providing information, visualization, query, analysis and storage data of surface water and groundwater resources in Binh Thuan province, based on ArcGIS Server software of ESRI, standard spatial data infrastructures.*