

Remotely Sensed Data Analysis of Landuse for Strategic Environment Assessment of Sea Port Development: Case Study of Haiphong, Vietnam

Dinh Lan Tran and Van Thao Nguyen, Viet Nam

Keywords: Coastal Zone Management; Geoinformation/GI; Remote sensing; Risk management; Spatial planning; landcover; ecosystem; GIS; quantitative change; mangrove

SUMMARY

Landuse and landcover change, both their current status and future forecast, are important issues in a strategic environment assessment for sea port development at large scale like Haiphong port area. Images of SPOT were analysed using PCI software in 1994, 2000 and 2005 in combination with GIS to detect the changes of landuse and land cover, particularly valuable ecosystems such as mangroves and tidal flats, and predict their future change in Haiphong port area. The outcomes of this analysis show 26 landuse/cover types of 1994, 2000 and 2005 and the quantitative change among them within about ten years. Changes among these types include the increase of 33.5% (1994-2000) and 57.7% (2000-2005) of harbour area, the decrease of 38.2% (1994-2000) and 109.8% (2000-2005) of mangrove area and the decrease of 5.12% (1994-2000) and 28.1% (2000-2005) of tidal flats. The areas around port area had most land use change are of Phu Long, Dinh Vu, Quang Yen, Thuy Nguyen, Do Son. Overlaying landuse layer resulted from SPOT images processed with master development plan to 2020 for port and associated economic zone in Haiphong show a large conversion from natural ecosystems such as mangroves (359 ha) and tidal flats (47 ha) to ports and associated economic zones. This prediction is used to calculate the loss of ecological and environmental values due to port development in Haiphong. The analysis and forecast of land use change using remotely sensed data contribute to building development scenarios in strategic environment assessment for Haiphong port area.

CONTACT

Mr. Dinh Lan Tran
VIET NAM
Email: fig7vietnam@gmail.com