

Remote Sensing applications in TTHue Province

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Satellite image showing the different forms of land-use in the Thua Thien Hue province.
(source: © IMER)

Summary

Remote Sensing (RS) combined with GIS (Geographic Information System) is a powerful tool for coastal managers and policy makers. Recognising the value of these tools at a central level, efforts were made to introduce the use of RS at the provincial level through pilot applications and intensive training courses in Hue, capital of the Thua Thien Hue province. These training courses, executed in the framework of the Vietnam-Dutch Coastal Cooperative Programme (CCP), delivered concrete RS & GIS products included a variety of thematic maps on topography and land use, and sequential and spatial RS analyses used for the detection of:

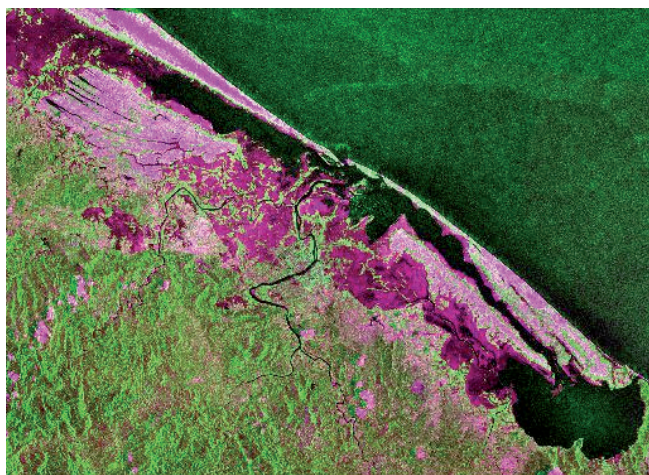
- Changes in land cover and development of soil erosion maps;
- Shoreline changes;
- Rapid aquaculture development;
- Impacts of the November 1999 flooding.

Provincial trainees in TTHue province demonstrated the value of the various applications to the high-level provincial authorities. RS data combined with 'ground surveys' were proven to be very suitable for monitoring, modeling, integrated spatial and sequential analyses in support of ICZM planning and implementation. In particular, the monitoring of flooding events provided a powerful tool to understand flooding mechanisms and to support flood damage assessments, risk analysis and integrated spatial planning of vulnerable low lying areas. However, the use of RS requires skills, knowledge and facilities to be supported at the proper technical and administrative authority levels. Therefore, training courses for coastal managers, policy makers and applied scientists and the development of primary RS facilities are essential requirements for the sustainable management of coastal resources now and in the future. The successful RS experiences in TTHue Province were transferred to other Vietnamese provinces (like in Nam Dinh province, where RS analyses were undertaken in 2004). The Vietnam National RS Master Plan aims to increase RS capabilities both at the national and the provincial level.

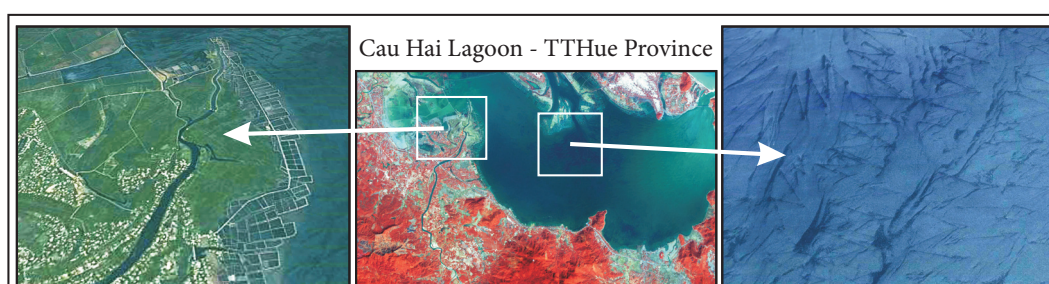
Remote sensing interactions between the international, national and provincial experts were shown to be useful for ICZM in the TTHue province.

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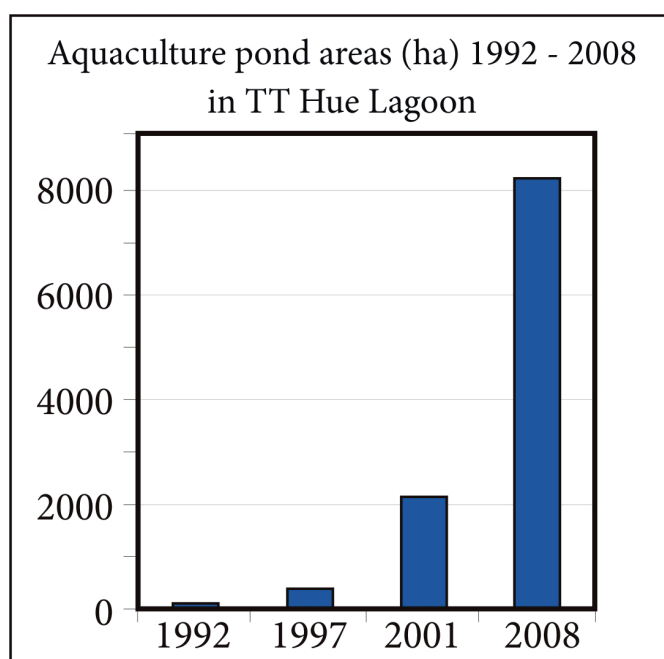
1. Coastal challenges
2. Benefits of RS applications
3. Objectives
4. Organisation
5. Results of RS cooperation in TTHue
6. Lessons learned & recommendations
7. Reference



Flooding: Composition of Landsat (01-09-1999) and Radarsat (06-11-1999) to identify flooded areas surrounding the Tam Giam-Cau Hai lagoon (purple shaded) in TTHue province; the deeper the purple the larger the water depth on top of the ground level. More than 2700 mm rain fell in the first four days of November 1999, following the cyclone Eve. The Radarsat image shows the flooded areas. RS combined with flood modelling can assist effectively in rescue operations, damage assessment and post hazard risk analyses. (source: © IMER / Ministry of Agriculture and Rural Development)



Cau Hai Lagoon, the southern part of the TTHue Lagoon system with intensive rice cultivation and aquaculture plots (left), and an abundant number of > shaped fish nets (right). (source: © IMER)



Aquaculture: Strong growth of aquaculture pond area in the TT Hue Lagoon. Results obtained by sequential RS analyses, a strong instrument for fishery management and determining the carrying capacity of the Lagoon. (source: CCP 2002, adapted)