NATURE RESTRATION OF MANGROVE ECOSYSTEM IN VIETNAM USING REMOTE SENSING

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Abstract: We detected potential mangrove restoration sites based on remote sensing analysis and GIS methodology on shrimp farm area in northern Vietnam. Since the 1980s in Vietnam, mangrove forest and its ecosystem are critically endangered by rapidly increasing of shrimp aquaculture industry and deforestation. In recent years, furthermore, mangrove wetland is pointed out as most vulnerable ecosystem to sea level rise by climate change. On the other hand, present shrimp farming system is very difficult to keep sustainable management. As a result, abundant shrimp ponds those are economically inefficient are increasing.
The objective of our research is to support nature restoration of mangrove ecosystem by reforestation on abundant aquaculture ponds. Through this process, we highly developed the analysis between satellite images and spatio-temporal data. Our practical test site was Ding Rui village of Quang Ninh Province in Vietnam. The specific procedures had following three steps.

1) GIS database construction of present shrimp ponds using high resolution satellite data (IKONOS etc.).
2) A detection of potential mangrove area based on image analysis between Landsat MSS data and 1/50,000 land-use map in 1960s
3) Final selection of target mangrove restoration sites that integrated result of 1) and 2) into consensus building of stake holders.

In according with these steps, we decided some proposed sites for mangrove wetland in northern Vietnam.