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SUSTAINABLE AQUACULTURE FOR A SECURE FUTURE

Title: Application of GIS and remote sensing for assessing watershed ponds for aquaculture development in Thai Nguyen, Vietnam

Author(s): Dao Huy Giap and Yang Yi
School of Environment, Resources, and Development
Asian Institute of Technology
Klong Luang, Pathumthani 12120, Thailand

Nguyen Xuan Cuong and Le Thanh Luu
Research Institute for Aquaculture No. 1
Tu Son, Bac Ninh, Vietnam

James S. Diana
School of Natural Resources and Environment
The University of Michigan
Ann Arbor, MI 48109-1115, USA

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Abstract: This study was conducted in Dai Tu district of Thai Nguyen province during November 2001–January 2003 to assess the aquaculture development potential for watershed ponds by integrating socio-economic and environmental data into GIS database, detecting land use change, and identifying and estimating potential areas for aquaculture development in watershed ponds. The socio-economic and environmental data were collected using pre-test questionnaires and field measurements. Three SPOT multi-spectral band satellite images were used to detect land use change during three periods of 1994–1998, 1994–2002, and 1998–2002. For land suitability evaluation, the suitability ratings were established according to FAO classification in terms of suitability of land for defined uses. Aquaculture production and economic returns from interviewed farmers were used to verify the results and comparisons among different land suitability levels.

The present study has predicted that about 4.7% (2,725 ha) of the total land area of 57,618 ha in Dai Tu district are suitable sites for watershed pond construction, compared to the existing 404 ha watershed ponds. The present study has demonstrated the usefulness of integration of remote sensing, GIS and attribute data to select suitable sites for the development of watershed ponds, and the importance to be a useful tool for planners to develop strategic plans for aquaculture development.

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