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AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM

## RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

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**Title:** Application of GIS and Remote Sensing for Assessing Watershed Ponds for Aquaculture Development in Thai Nguyen, Vietnam

**Author(s):** Dao Huy Giap, Yang Yi  
Aquaculture and Aquatic Resources Management  
School of Environment, Resources and Development  
Asian Institute of Technology  
P.O. Box 4 Klong Luang, Pathumthani 12120, Thailand

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

James S. Diana, C. Kwei Lin  
School of Natural Resources and Environment  
University of Michigan, Ann Arbor,  
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 socioeconomic 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 exist-

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ing 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.

This abstract is excerpted from the original paper, which was published in Proceedings, MAP Asia 2003, October 13-15, 2003 Kuala Lumpur, Malaysia: [www.gisdevelopment.net/application/nrm/water/overview/ma03166.htm](http://www.gisdevelopment.net/application/nrm/water/overview/ma03166.htm).

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