

INFORMATION ON RESEARCH RESULTS

1. General information:

Project title: **THE LINKAGE BETWEEN QUALITATIVE LAND EVALUATION AND ECONOMIC QUANTITATIVE LAND EVALUATION AS A BASIS FOR SUSTAINABLE LAND USE PLANNING**

(Case study in Cang Long district, Tra Vinh province)

Code number: **B2009-16-115**

Coordinator: **Prof. Dr. LE QUANG TRI**

Implementing institution: **CAN THO UNIVERSITY**

Duration: from June 2009 to June 2011

2. Objective(s):

- Study on physical land evaluation as a basis for economic quantitative land evaluation.
- Identify the economical characteristics and their parameters that were used for economic quantitative land evaluation.
- Study on the linkages between physical land evaluation and economic quantitative land evaluation that is a basis for effective and sustainable land use planning at district level.

3. Creativeness and innovativeness:

- Finding out the linkages between results of physical land evaluation and economic quantitative land evaluation.
- Building up the procedure of the linkages between physical land evaluation and economic quantitative land evaluation and to multi-criteria evaluation.
- Application of information technology for linking of physical and economic quantitative land evaluation.

4. Research results:

Results of study showed that thirty two land mapping units were identified together with eight selected land use types for physical land evaluation of Cang Long district, Tra Vinh province. From that, three land suitability zones were determined. Conditions for upgrading of land suitability classification for land use types (LUTs) were land qualities of: (i) Thickness of top soil quality, (ii) Irrigation capacity quality, and (iii) Acidity hazard. Economic quantitative land evaluation with two economical characteristics of gross-margin and B/C gave the results that four economical quantitative suitability zones of eight land use types and thirty two land mapping units were established. This showed that the results of physical land evaluation can be as a basis for economic quantitative land evaluation. From those results of physical land evaluation can be compared with characteristics of gross-margin and B/C of economic quantitative land evaluation per each land mapping unit, from that zoning of physical suitability and economical suitability can be done. Results of economic quantitative analysis showed that the best land use type for food security criteria was double rice + upland crops (LUT3), for social efficiency criteria was fruit trees (LUT7), and for benefit increasing and environmental criterion were double rice + upland

crops (LUT3). A land use type of triple cropping of rice (LUT4) caused environmental impact such as low bio-diversification, pollution of soil and water. Results of study also found that the criterion of food security and benefit played an important role in the present development situation of Cang Long district, Tra Vinh province. Therefore, the main land use type of double rice + upland crops (LUT3) was proposed for developing in the present and future. Results of study also showed that the software of ALES, IDRISIW, PRIMER, and MAPINFO can be used for physical land evaluation that was a basis to link with economic quantitative land evaluation. By application of GIS for economic quantitative land evaluation showed that the role of GIS in supporting for land use planning based on results of physical and quantitative land evaluation. From these results of study, the procedure of linkage between physical land evaluation and economic quantitative land evaluation was proposed.

5. Products:

- 02 scientific papers
- 02 Master theses: Le Thi Mong Chung and Luong Thanh Sieu
- 01 PhD candidate to conduct 01 case study: PhD. Student Le Thi Linh

6. Effects, transfer alternatives of research results and applicability:

- To apply the procedure for doing economic quantitative land evaluation at district level that was a basis for preparing land use planning and to adjust land use plan in the condition of the Mekong Delta.
- To use as a basis for next study that related to the linkage between physical land evaluation and economic quantitative land evaluation.