# "BUILDING A DECISION SUPPORT SYSTEM FOR AGRICULTURAL LAND USE PLANNING AND MANAGEMENT AT THE DISTRICT LEVEL IN VIETNAM"

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## Research description

•In Vietnam, most of farm households have been making production decision by its self. Therefore, production decisions have not been made based on the long-term predictions of market demand and comparative advantages under the assistance of scientists as well as administrators.

•This problem can be solved by implementing interdisciplinary research methods, which relate to Scientists in the fields of geography, land use planning, agronomy, agricultural economics and informatics technology.

• Information that will be collected including land use and management by applying GIS technique and Remote sensing; current crop patterns and local knowledge of farmers; household economy in relationship with land use planning, market prediction and risk; etc.

• Informatics and mathematical modeling techniques will be of use in data processing, optimal solution determining and information providing for making decision support.

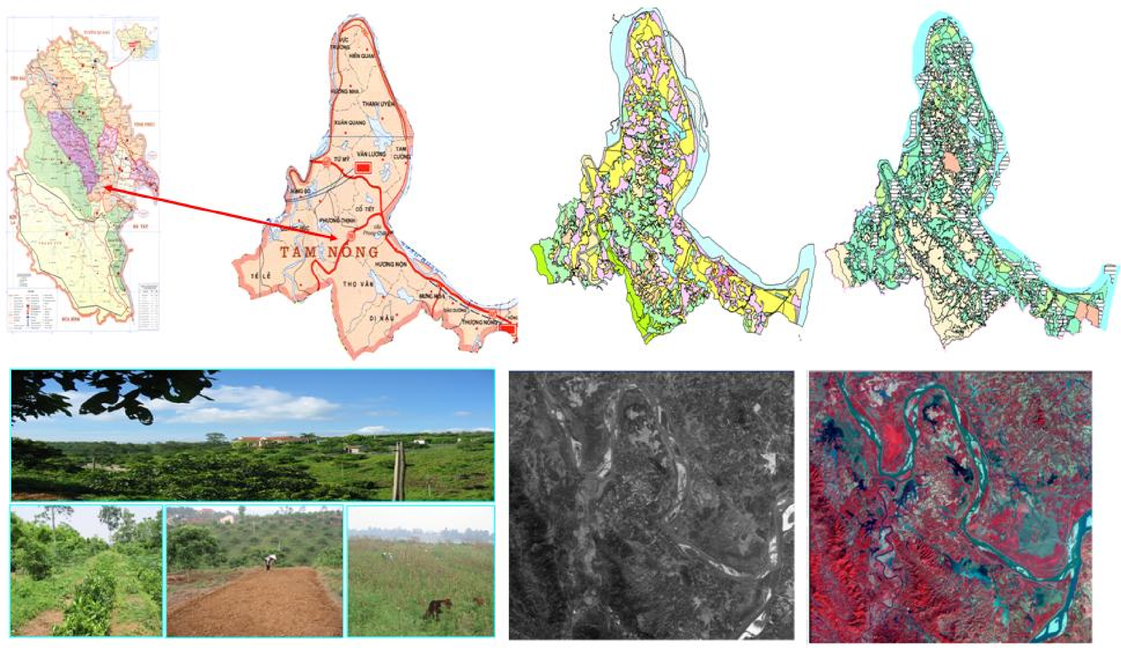
## Objectives

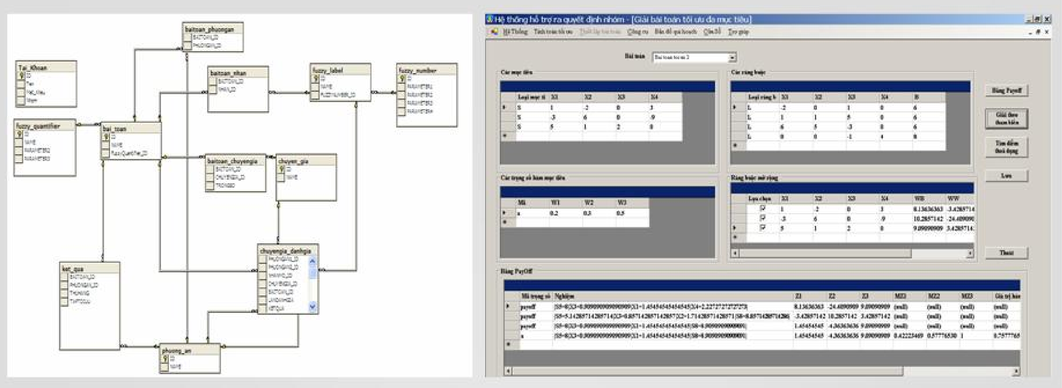
• The Objectives research will develop computer-based information enabling those who manage agricultural, environmental, and natural resources to make better decisions.

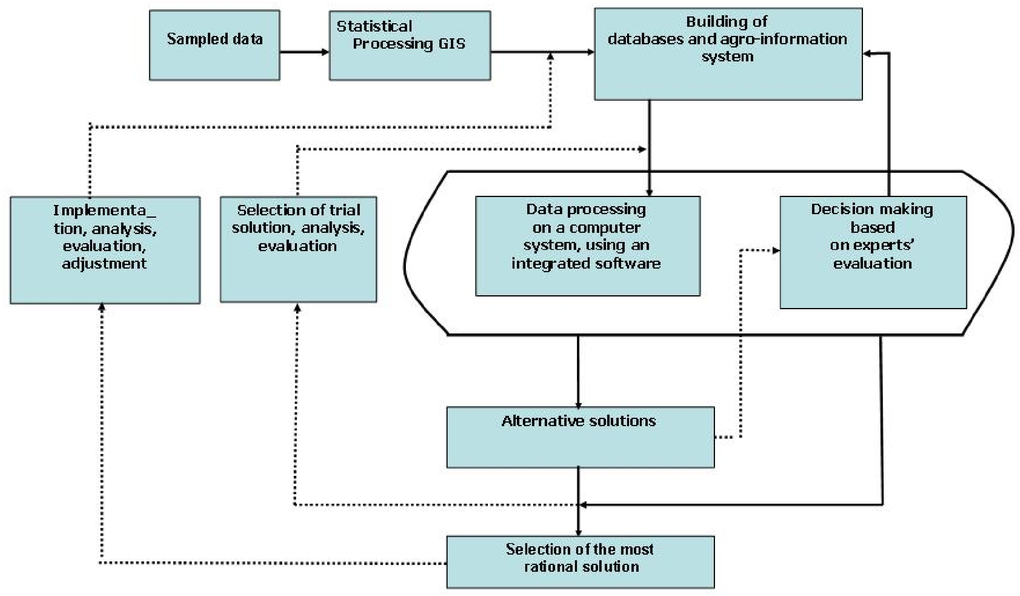
• The overall objectives for this research are to develop an information system to improve decision making capacity of farm households and administrators in agriculture production and to provide opportunities for extension officers as well as others research staff to develop their skills in land use planning and building strategy for agricultural development.

## Methodology

- ***Building standardized agri-databases for the commune and district levels.***
  - Collecting data concerning soil indices, climate, traditional crops structure, plant and new agricultural biotechnologies...
  - Sampling data using GIS and Remote Sensing
  - Collecting data from smallholders and farmers by surveys
  - Quantifying social-economic development criteria and indicators, as well as smallholders'/farmers' experiences and preferences
- ***Statistical processing of collected data***
- ***Developing an integrated land use planning model***
  - Multiple objective optimization model
  - Group decision making model
  - Simulation model
  - Quantifying social-environmental indicators and criteria, analysis and evaluation of land use planning solutions
  - Proposing methods for the model implementation
- ***Building a Decision Support System***
  A Decision Support System will be implemented for supporting decision adjustment and decision making in land use planning and management at the commune and district levels with the aims:
  - Improving decision making capacity of the administrative committees.
  - Improving productivity for smallholders by providing them with agro-information and different land use solutions.






The simplified diagram of the Decision Support System

## Outputs

• A set of standardized database and agro-information system of the district. This database will include household surveyed data on agricultural production and their desire and preferences, general information of economic-social conditions and agriculture at commune and district levels.

• A set of various and optimal options for decision making in order to support for decision making system in the research site

• Documentation of different methods that would be used in the research, especially modeling methods. An integrated software system can be derived from the research results to support decision making in agricultural production.

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