

The Research Group
Physical Geography

has the honour to invite you to the public defence of the PhD thesis of

Hong Hanh TRAN

to obtain the degree of Doctor of Sciences

Title of the PhD thesis:

Land use change dynamics, its drivers and consequences in the Ca Mau province, Mekong delta, Vietnam

Promotor:

Prof. Dr. Matthieu KERVYN

The defence will take place on

Monday 27th February 2017 at 16.00h

in Auditorium D.2.01 at the Campus Humanities, Sciences and Engineering of the Vrije Universiteit Brussel, Pleinlaan 2 - 1050 Elsene, and will be followed by a reception.

Members of the jury

Prof. Dr. Frank CANTERS (chairman)

Prof. Dr. Ludwig TRIEST (secretary)

Prof. Dr. Thuc TRAN (co-promotor, IMHEN)

Prof. Dr. Bas VAN HEUR

Prof. Dr. Anton VAN ROMPAEY (KUL)

Dr. Anne GOBIN (VITO)

Curriculum vitae

Hong Hanh Tran (born in Hanoi, Vietnam) in April 1982, obtained her BSc and MSc in Surveying and Mapping from Hanoi University of Mining and Geology. She is working as a lecturer in the Photogrammetry and Remote Sensing Department of that University. She started her PhD at VUB in 2012 funded by the Belgian Technical Cooperation. Hanh is the main author of 1 published international publication, and 3 additional manuscripts are under review. She presented her research at several national and international conferences by oral talks and posters. She also supervised one master thesis student.

Abstract of the PhD research

Land cover/land use in the Tran Van Thoi District - a flat, low-lying, coastal and rural district of the Ca Mau Province, the southernmost province of the lower Mekong delta - has been changing rapidly at different spatial and temporal scales. The Tran Van Thoi District is considered "a small Ca Mau Province" because it hosts all the land cover/land use types of the province, including mangrove forest, *Melaleuca* forest, cultivated lands, aquaculture ponds, built up areas, bare lands, and natural water bodies.

The main objective of this research is to understand the dynamics, drivers and impacts of land cover and land use change (LUCC), and to relate these to the vulnerability of coastal households. This in order to provide knowledge supporting policy formulation for sustainable land management in the study area. More specifically, the study was designed to address the following objectives: (i) detect, quantify, and map the spatial-temporal dynamics of LUCC that occurred between 1973 – 2011; (ii) identify the most meaningful socio-economic and environmental drivers and consequences of LUCC based on experts' opinions; (iii) understand the factors influencing the understanding of individuals about the concepts, causes and effects of LUCC, as well as how they perceive and react to LUCC management; (iv) modelling the controlling factors of major LUCC decisions, including aquaculture expansion and housing expansion, at household level; (v) and investigate the vulnerability of coastal households to natural hazards and its determining factors.

In conclusion, this research not only demonstrates how remote sensing techniques can be applied to detect the spatial-temporal dynamics of LUCC, but also enhances our understanding of the complex set of LUCC drivers, the attitude of households regarding LUCC management and the consequences experienced locally, including for the social vulnerability of households. The findings and outputs of this study will help the local management in supporting policy, effective land management, and environmental, socio-economic, and well-being sustainability.