

Le Corps professoral de  
Gembloux Agro-Bio Tech - Université de Liège vous prie  
de lui faire l'honneur d'assister à la défense publique de la dissertation originale que

**Madame NGO Thi Thu Hang,**

**Titulaire d'un diplôme de master of professional accounting,**

présentera en vue de l'obtention du grade et du diplôme de

**DOCTEUR EN SCIENCES AGRONOMIQUES ET INGENIERIE BIOLOGIQUE,**  
le 5 octobre 2018, à 10 heures précises (personne ne sera admis après cette heure),  
en l'auditorium ER1 (Economie et développement rural, bât. 18),  
Passage des Déportés, 2, à 5030 GEMBLoux.

Cette dissertation originale a pour titre :

« Household risk management strategies for coastal aquaculture: The case of clam farming in Thaibinh province, Vietnam ».

**Le jury est composé comme suit :**

Président : Prof. G. MAHY, Professeur ordinaire

Membres : Prof. P. LEBAILLY (Promoteur), Prof. H. C. TRAN (Copromoteur - VNUA, Vietnam),  
Prof. P. BURNY, Prof. N. ANTOINE-MOUSSIAUX, Prof. T. DOGOT, Dr P. MAI LAN (VNUA, Vietnam).

## Summary

With over 3,260 km of coastal line and 112 estuaries, the internal waters and territorial waters are 226,000 km<sup>2</sup>, the exclusive economic zone is more than 1 million km<sup>2</sup> and more than 4,000 islands, forming 12 bays and lagoons with a total area of 1,160 km<sup>2</sup>, Vietnam has high potentials for aquaculture development. Vietnam's seafood output has been growing steadily for several recent years (since 2000 up to 2016) with an average increase of 9.07% per year. However, besides positive trends and advantage development, Vietnam aquaculture has faced to several issues, which consisted asymmetric information issues, high demanded quality of products, but the main cause is risks, from production to the market. This study has explored the main risks faced by the coastal clam farming sector in the Thaibinh province located in northern Vietnam, which can be classified into two types in term of the nature of their cause: man-made and natural ones, and three types in term of impact: production, market and financial risks. Those risks were caused by several reasons, including extreme weather events, wasted water flows, production technics; market access or financial capacity. Among others, man-made risks are more severe and more difficult to cope with than those of natural.

These above risks have caused lethal consequences for clam farming. For the three communes under this study, less than half of the farmers have not yet recovered although they have mobilized capital to restart clam farming again, and the rest have not yet been able to restart clam farming; about one-third of the farmers had to sell their fixed assets to repair debts related to their clam investment, and ten households had left their villages under pressure of debts. However, in such risky clam farming environments and increased market difficulties, beside groups of farmers seriously impacted by risk, it is surprising that one-fifth of the surveyed farmers have succeed for all their clam raising cycles so far, one-fourth of surveyed farmers have been well resilience after the shocks. Different household's risk management strategies have been discussed for their differences between and among households in their clam farming and marketing practices. In general, the tactics are related to increasing farm size, technical innovation application and accessing financial sources with no or a lower interest rate provided better conditions for clam growth, reducing clam loss, and to help farmers reduce aquaculture risks as well as speedier recover from shocks.

There are many factors impact to the application of risk management strategies and its tactics, including both internal factors and external factors. Internal factors which have more impacts are the households' financial capacity and the experiences of the head of households, while the education level and the job of household seemed to have little impacts to the choice and application of households' risk management. External factors referred to the policy factors and the knowledge capacity enhancing in the community. Among the activities in clam farmers community, the activities of "groups for experience sharing" was found to have more impacts while the training course and activities of farmer's union have less impacts. Besides, as a part in a system, the role of government had played a role in directing farmers in clam farming practices, but not much in risk management.

Given that the tactics addressed the capital issues, land and clam farming techniques had positively contributed to the result of household risk management strategies, and experience gaining and sharing activities have strongly impacted to the application of this tactics, the intervention and policies of government in all level to the farmers should focus more on these issues. It is not only from the support policies but also from the extension program, the training course and activities of farmer's union, toward to practical-oriented approach, as well as fitting with the farmer's desire. Furthermore, the additional of policies/interventions in market issue (for both input and output) should be taken into account because those risks were considered as meso level, in which farmers can not solve by themselves and therefore definitely the support from government, from local to the state level. To support farmers in managing risks, several government interventions are needed: (1) better re-zoning of clam farming areas in parallel with an increase in the farm size of each household, (2) promoting sustainable linkages between the farmers and the formal financial market and output market, and (3) investing more funding into research and extension related to sustainable clam farming practices and to the improvement of farmers' skills in cooperative works and management.