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SUMMARY OF DOCTORAL THESIS

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Title: A Study on the Characteristics of Farmers' Management Capability in Thailand

(タイにおける農家の経営能力の特徴に関する研究)

Management capability is the fourth major agricultural input and plays an important role in managing other three important inputs: land, labor and capital. Improving management capability is one potential solution described in literature for farmers to thrive in the changing economic and climate environments. To improve farmers' capability, it firstly needs to be a good understanding of the characteristics of farmers' management capability. However, there has been no clear definition of what it means in case of Thailand' s farmers so far, as previous studies have used several varying methods to capture it. In addition, many studies in Thailand have only measured part of farm outcomes such as profitability, efficiency and satisfaction of farmers to find out the best way to develop agricultural production and farmers' livelihood. Accordingly, it is significant to study this issue and address this gap in research. Therefore, the objective of this study is to clarify the characteristics of farmers' management capability in Thailand. This characteristic is analyzed by following two aspects: "personal characteristics" and "decision-making". In addition, this study confirm the relationship between farmers' management capability and farm outcomes of farmers.

To achieve the objective, this study used farm-level data obtained from interviewing family based farmers in five rural villages of Khon Kaen Province, using the structured questionnaires. The farmers were purposive randomly selected and interviewed several times from August 2012 to August 2016. One of the criteria to select the farmers was that they had at least one farm pond and their farms were similar in terms of soil fertility.

With regard to personal characteristics, this study highlighted two points: farmers' abilities and farmers' attitudes. To measure the level of farmers' ability, nine skills of noncognitive ability via managerial competency was employed. The findings showed that farmers' perception of managerial abilities ranked at a high level for risk oriented, resource mobilized, decision-making, communicative, and planning and goal setting skills. On the other hand, at the moderate level their ability varied for information searching, accounting and financial management, and marketing management. To find out the factor contributing to improve farmers' ability, the results of multiple regression analysis show that participation in group activities had a positively and significant relationship with the ability of accounting and financial management, marketing management, and planning and goal setting. Moreover, household income had a strong positive correlation with information searching skills and farmer's age was positively related to decision-making skills. Area of rice cultivation also had a positive associated with increasing planning and goal setting skills.

Farmers' attitudes toward farm management and farm development were analyzed by comparing between farmers with efficient and inefficient farms. The results show that there was no significant difference in attitudes of farmers with efficient and inefficient farms. Both types of farmers paid more attention to farm performance, were open to more ideas and business orientation, took financial risks, enjoyed and were happy doing on-farm activities without having any stress. In addition, the farmers agreed that improving the quality of farm production and reducing production cost were the most significant issues for their farm development.

According to the aspects of decision-making, this study presented the results regarding the processes of farmers' searching and sharing agricultural information and farmers making decision in agricultural problems. The results on acquiring information reveal that the process of farmer-to-farmer learning within their social networks gave farmers easily access to agricultural information. In addition, high-ability farmers were becoming the centers of consultations among farmers in the local community. This is because farmers felt more comfortable to discuss their agricultural matters with local networks than those they deem to be non-locals. The high-ability farmers also preferred to share their knowledge and technology to encourage other connectors.

The findings of farmers making decision show that the major serious problem defined by farmers was severe drought, followed by a problem of receiving low prices for selling products. A half of farmers with detecting problems as major serious chose solutions for problems by year-to-year decision, implying these farmers are likely to face the same problems again. In contrast, those farmers with problems termed as minor or not serious made decision to overcoming the problem for long term by searching several solutions, analyzing the impacts of the solutions and choosing the best way for implementing on farm. This different decision of solving problems might cause farmers receiving different levels of farm outcomes.

Finally, to see the impacts of management capability, this study evaluated farm outcomes by measuring efficiency. The findings based on using a data envelopment analysis revealed that it is crucial to increase technical, allocative and economic efficiencies on farms in this study area. Growing cassava in the early rainy season and harvesting it after 10-11 months could lead a farm achieving its full efficiency. To increase technical and allocative efficiencies, the results of a Tobit regression show that farmers with access to more than one irrigation system tended to have higher technical efficiency. Furthermore, a smaller farm size and larger number of family labor were positively associated with a higher allocative efficiency. However, there were no relationship between farmers' management capability and farm outcome in this study.

As previously stated, the findings of this study are conclusive proof that 1) farmers in Northeastern Thailand have an ineffective management capability with regard to managerial ability, ability to allocate farm resources, adopt new technologies and produce maximum farm outcomes, and make decision to deal with problems in the efficient way. Accordingly, all these characteristics of farmers' management capability are crucial to improve. 2) To improve farmers' abilities, the process of farmer-to-farmer learning is important to consider. As this process give famers easier access to agricultural information and new technologies. 3) To enhance farmers making decision effectively, farmers should be trained how to seek new alternatives, analyze the impacts and choose the best solutions for implementation.