Smart Farmer Development Project in Thailand

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INTRODUCTION

The Smart Farmer Development project was introduced to 12.6 million farmers in 2013. It is one of the development projects under the Ministry of Agricultural and Cooperatives' (MOAC) policies. The main objective of that development project is to improve the livelihood of the farmers through improvement of their skills and competences in agricultural production. This is done through training program, sharing knowledge and information. On the other hand, the government is trying to address the impacts of climate change such as drought and flood problems. In 2014, this policy has also been initiated for livestock farmers to improve their knowledge. The number of livestock rearing farmers was recorded at 3,011,997 in 2015. There are two training courses for SMART farmer development project: Farmer Development to be SMART farmer and Modeling Smart Farmer Development (Sitthitool, 2016).

Government implementation

The Ministry of Agriculture and Cooperatives cooperates and shares data with the Ministry of Information and Communication Technology (ICT) center to access the facilities for the farmers supported by the government, welfare and other benefits by using their national identity cards (Arevaaamy, 2013). Moreover, the Department of Agricultural Extension made the registration system for the farmers to register their ownership such as field crops, animals and fisheries in 2009. Through the registration system, it is easy to coordinate with the government agencies for farmers' affairs. Moreover, it can update and complete the database concerning the farmers to get more accuracy. Likewise, government policy and various measures such as production management; promotion and support on the use of inputs, classification of target farmers; and assistance from the government in the event of a disaster can be implemented based on those databases. All advantage of this system is that it is possible to track and evaluate the performance of the public sector through the database (Viyakornvilas, 2014).

Soitong (2010) reported that the motivation of farmers plays a vital role in the participation of farmers in the development of the smart farmer program. Therefore, the farmers were stimulated by giving the following incentives.

1. The government supported the training costs for the farmers.
2. The farmers who participated in the training will receive a certificate after they are trained.
3. Trained farmers are now considered as smart farmers.
4. Based on their learning through their training course, some smart farmers made an improvement in their crop production efficiency.
5. Some smart farmers are enlisted to assist in the projects given by the Rice Department and Department of Agricultural Extension and an honorarium was paid to them once-a-month.

Smart farmer program

Soitong (2010) also stated that smart farmer program was initiated since 2006. That program plays an important role in improving the farmer-to-farmer extension. Smart farmers are selected from the lead farmers who have farming experiences. The main objective of the smart farmer program is for the farmers to serve as extension agents who will transfer the research findings and policy developments to the neighboring farmers and report back research needs, significant agro ecological conditions and provide rapid feedback on the practicalities of technology packages.

The main actors in the smart farmer model are the Rice Department for research activities, local government agencies to facilitate improved food production and livelihood for their rural community, and Community Rice Centers (CRC). To distribute and widely adopt the new technologies, smart farmers are selected from the villages which are targeted for CRC to boost the productivity of rice. The farmers who joined in the smart farmer project can also access the new rice varieties released by the government and participate in the training programs concerned with innovative rice production technologies. These selected farmers are trained to improve their practical skills as trainors to and develop good communication skills with others. They also serve extension agents to the farmers from their local areas.

The criteria for smart farmer selection at the initial development program stage are as follows:
1. Must be a land owner who lives in the community;
2. Has good health and is over 25 years of age;
3. Is educated beyond grade 4;
4. Is knowledgeable and experienced in rice production;
5. Is prepared to participate in training to become a SMART farmer;
6. Is prepared to act as a resource person for his/her fellow farmers;
7. Will be accessible to other farmers as well as CRC members; and
8. Is willing to work closely with an extension agent

Selection of smart farmers

There are at least 25 farmers in the CRC. Among them, 10 farmers are selected by CRC as representative for the training program. The rest of the farmers will be trained by the representative farmers after the training. Out of 10 farmers, 5 farmers are selected by the Tambol Technology Transfer Center (TTTC) which is a local government unit responsible for agricultural development at a subdistrict level. The farmers who are not members of the CRC can deliver their knowledge for smart farmer training.

Training of smart farmers

After selecting the smart farmers based on the criteria, they are trained to become an effective smart farmers for three days about technical knowledge and communication skills. They are also provided resource materials. The main objective of the training program is to transfer the technology for rice production in their respective area. The course in the training program mainly focuses on the following:

1. Effective communication skills, including how to make good presentations;
2. Roles of the smart farmer in the CRC and in the village;
3. A package on technologies and practices that constitute good agricultural practice (GAP) for rice;
4. How to develop and implement curricula for Farmer Field School (FFS);
5. Preparing teaching materials, particularly those related to technologies that address the key needs for increasing rice production in the village; and
6. Empowerment activities, skills for helping people change their behavior, participatory problem analysis, and the development of associated opportunities to tackle these problems.

Once trained, the smart farmers become trainers at their village level. They are allocated to share their knowledge and experiences to other farmers from their local areas. There are 7,000 CRCs in Thailand. Therefore, 35,000 SMART farmers have already been developed after the training program.

At present, there are two major criteria to become a smart farmer:
1. Income – The households must have minimum income of $US 5,143 (THB180,000) per household per year.
2. Other qualifications: the farmers must:
   a) own knowledge for their activities;
   b) have detailed information to grow rice to make decision;
   c) have management skills for their agricultural production and market;
   d) have awareness of products quality and consumer safety;
   e) have social and environmental responsibility; and
   f) be proud to be farmers

The department of agricultural economics and resources, faculty of economics, Kasetsart University conducted and made interviews with 741 respondents. The farmers are divided into two groups based on the criteria as mentioned above: existing smart farmers and developing smart farmers. If they pass both criteria, they are called as Existing Smart Farmers. But, they will not be able to qualify in the household income or basic features or both; they are called Developing Smart Farmers. However, we were able to observe farmers in some areas of Thailand. We conducted a random collection of data in Lopburi Province, Thailand with the following results.

Existing smart farmers

The total 87 respondents were existing smart farmers. Farmers' ages ranged between 56 and 57 years old. They have experienced agricultural planning for almost 32.4 years. The family sizes ranged from 4 to 5 per household. Only 0.4% of the total respondents got bachelors' degree. For their work, only 1.6 % was full time laborers and only 9% were part-time laborers.

Farmers have an average cultivated area of 4.67 hectares which were near the source of water irrigation used 4.62 hectares (98.97%) for cultivation. The farmers owned the cultivated area of 3.63 hectares which was far from the source of water irrigation used 3.47 hectares were used for cultivation.

The average income was $US10,649 (THB372,703) per year. The total production costs were $US3,300 (THB115,490) per year and their net income were $US 8037.91 baht per year. Other net incomes were $US3,169 (THB110,906) per year and $US4,180 (THB146,307) per year.

Of the total respondents, 29.9% have computers and internet connection. Some only used smart phones (18.4) to get the information for their crop production.

Developing smart farmers

Of the total respondents, 654 were developing smart farmers. Farmers' ages ranged from 56-57 years old. They have farming experiences of 32.7 years. The average family size was 4.2. Of the total respondents, only 0.4% got bachelor's degree. Among the total respondents, only 1.7% were full time laborers whereas only 9% were part-time laborers.

The total cultivable land was 2.8 hectares which is near the source of irrigation water. However, just 2.58 hectares was used for cultivation. The arable land which was far from the access of irrigation was 3.42 hectares and just 3.2 hectares was used for crop production.

The average income was $US6,335 (THB221,735) per year and the expenses for crop production were $US2,425 (THB84,861) per year. The net income was $US3,911 (THB136,874) per year. Other income were $US3,638 (THB127,331) per year and other expenses $US5,845 (THB204,579).

Among the total respondents, only 17.7% have computers and internet access. Only 8.9% of the respondents used smart phones to get information for their crop production.

When the factors between existing smart farmer and developing smart farmers were compared, it came out that the existing farmers had more advantages than the developing farmers in terms of income and expenses for both farm and non-farm activities. Moreover, most of the Existing Smart Farmer (ESF) were using computers and internet for searching data compared to the Developing Smart farmers (DSF). The ESF have also higher education than the DSF.

CONCLUSION

The smart farmer approach was initiated since 2006 to improve the quality of life of farmers through training, sharing of knowledge and experiences. The criteria has been set up for the selection of smart farmers. In criteria, the terms of income is not appropriate. This study found three farmers who pass all criteria but they have negative net farm incomes. Therefore, the criteria of income should be changed to net agricultural income instead. As for the government, some incentives have been developed to motivate the farmers to participate in the training program to become smart farmers. After the training program, the selected farmers got the certificate and became smart farmers. They are assigned to their local areas to distribute their knowledge and experiences gained from the training course.

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