

The Need of Tailor Made Agribusiness Farmer Field School to Develop Entrepreneurship: The Experience from Paddy Seed Growers in Indonesia Context

Ujang Maman, Iin Inawati, Iwan Aminudin and Akhmad Riyadi Wastra
Department of Agribusiness, Faculty of Science and Technology,
State Islamic University, 15402 Jakarta, Indonesia

Abstract: The Farmer Field School of Integrated Pest Management (FFS-IPM) has not been properly successful to deliver farmer as a learner which has innovation awareness. In the post FFS-IPM project, the farmer has not fully implemented the IPM principles. Based on the fact, it needs a new FFS which does not emphasize on the adoption of innovation but focuses to develop human capacity. In accordance with it the farmer group in serang, banten, supported by Agricultural Service Districts (ASD) initiated an Agribusiness Farmer Field School (AFFS) to develop farmer's entrepreneurship. The research pointed out the high level of manpower and time participation of AFFS members but the product moment correlation analysis revealed, farmer participation on AFFS did not affect the entrepreneurship and the opposite, the χ^2 -test described that farming experience and farm land size affected the entrepreneurship. Indeed, the research recommended the need of tailored-made AFFS on the basis of socio-economy to develop entrepreneurship.

Key words: Agribusiness farmer field school, farmer participation, entrepreneurship, agricultural service districts, socio-economy

INTRODUCTION

The aim of agricultural extension is to develop the farmers to be a learner who well know about innovation, its importance and adopt the new ideas and practices based on their awareness as part of their problem solving in farming activities. But unfortunately, the extension service gets difficulty to disseminate knowledge and to develop adoption of innovation equally within diverse societies. Singi and Mody (1989) since 1970's deliberated the knowledge gap within message's recipients. At the same period (Roling *et al.*, 1989) described the unequal of adoption of innovation. The loss of message according to Shingi's and Mody's research in Indian extension of potatoes and popcorn cultivation innovation is >60% in average.

Jeffres *et al.* (2011) tried to narrow the knowledge disparity by the reconceptualization of knowledge. Based on the assumption that the knowledge is diverse by level of difficulty to acquire; the closeness to the object and the interest of the subject, the more familiarity of the topics will urge the disappearance of knowledge disparities. The heterogeneity of socio-economic background is the main factor lead the people to get knowledge inequality (Yang and Grabe, 2014). The Farmer Field School (FFS) is indeed a suitable way to solve the

problem of knowledge inequalities. The forum where the farmer has a free dialogue, observation and experiment to certain extent will deliver them to adopt the innovation relatively equal (Maman *et al.*, 2015). The FFS is not only a participatory approach of agricultural extension but to support farmer to get experience, field finding and decision making by their own (Anandajayasekeram *et al.*, 2007).

However, the FFS could apparently not deliver a farmer as a learner in a proper condition. The case of Sungai Kakap District, Kubu Raya, Indonesia described the only 24% of the obedient farmer who adopt and practice the IPM recommendation in the post of FFS (Jailanis *et al.*, 2014). The rest of the farmer practiced part of IPM ways or even leaved the all IPM practices and come back to the old habits in which they are dependent on pesticide uses. In addition, the evaluation research of IPM leads us to open minded about the need of FFS improvement. Based on pesticide budget and the yield of paddy product in the period of 1991-1999 in Indonesia as an indicator, the FFS dedication to the farmer about the IPM practices had gotten unsuccessful. The data from FFS graduated, the farmer exposed to the IPM program and the control farmers who are not FFS graduated and unexposed farmer, highlighted the yield of rice products for three groups of farmer decreased while the pesticide

budget for the same groups of farmer proved increasing (Feder *et al.*, 2004). Despite, the lack impact to the farmer practice, the FFS model is steel needed. The certain principle of FFS could be picked up and incorporated into agricultural extension (Anandajayasekeram *et al.*, 2007). The personal contact of communication in the form of dialogue in a small homophile group has a strong probability to change someone's attitude toward the certain object (Rogers and Shoemaker, 1987; Roman, 2003). The FFS model of course needs some improvements. But the question is how to make it more proper to develop the farmer awareness? Hypothetically, the FFS should not stress on the innovation dissemination but the opposite, it should emphasize to build the human capacity. In this context, the farmers group in Serang, Banten supported by ASD, pioneers the Agribusiness FFS a combination between the FFS and agribusiness training to develop entrepreneurship in the field of paddy seed growing. To what extent the AFFS successfully establishes the entrepreneurship spirit? The result of AFFS will be a good input to reconceptualization of FFS model.

Conceptual framework and reasoning: The entrepreneurship, the focus of the research as a dependent variable is a mental dynamic in which a person is driven by certain internal forces to have a need to attain and to obtain something, experiment and to accomplish a certain target. For the economist, the entrepreneur is a person who brings resources, labor, material and other asset into combination that makes their value greater than before and also one who introduces change, innovation and a new order (Turner, 1992). Relevant with the statement, the entrepreneurship is a creative and innovative ability as a basic way to search a chance toward the successful condition. For more clear, creativity is a skill and ability to develop new idea to solve the problem and browse the chance while the innovation is an ability to apply the yield of creation to solve the problem practically and find the chance (Suryana, 2004).

As a spirit and dynamic, the entrepreneurship performs the positive thinking and optimistic; act on the basis of need for achievement; responsible and brave to face the risk; able to develop self-confidence, power of thought and skill; capable to make a right decision and problem solving; competent to formulate vision, mission and purpose of life; capable to appreciate and plan the use of times; able to perform a better communication and team work and finally has an ability, creatively and innovatively to catch the business chance (Maman, 2009). However, the discourse about entrepreneurship, indeed, never goes outside the three elements of behavior that includes: initiative taking, the acceptance of risk or failure and the ability to organize and reorganize the

socio-economic mechanism to turn resources and situation into practical account (Turner, 1992). Actually, the three aspects of entrepreneurship are essential to get successful business.

Truthfully, the entrepreneurship is the consequence of high level of need for achievement (n-ach). Katz (1992) in the light of McClelland perspective, identified ten researches which associated between n-ach and entrepreneurship in the period of 1965-1984. The seven of ten researches revealed that the high score of n-ach contributed to the spirit of entrepreneurship. By the high level of n-ach, McClelland argued, someone will be encouraged to get know the things relevant with his interest to experiment to develop his skill and finally come to proper decision (McClelland, 1993). Based on McClelland vision, the entrepreneurship development to widen human capacity is a complete solution for the problem of knowledge gap, less skill and the lack of ability to make a right decision.

The AFFS training probably yields diversity of entrepreneurship level. Background and characteristic of people hypothetically contributed to the grade of entrepreneurship. In American experience, Katz (1992) provided eight characteristics of people affected the entrepreneurship, includes childhood family environment, personal values, age, gender, work history, moral support network and professional support network. But as a farmer society based activity, the community participation in the AFFS training is a main predictor for farmer's entrepreneurship. The important keyword in participation is voluntary contribution, self-determined, community involvement, active process and dialogue (Mikkelsen, 1999). The type of community involvement and contribution could be in the form of idea, time, man power dedication and fund contribution (Sitopu, 2014). As a coming from farmer and by the farmer activity, the participation level hypothetically is a determinant factor for the entrepreneurship.

However, beside the participation, the farmer characteristics also could not be abandoned. In agricultural extension experience, the characteristics of farmer are commonly used as predictors to the effectiveness of extension activities, like knowledge, innovativeness and finally adoption of innovation (Rogers, 1983; Rogers and Shoemaker, 1987). The characteristics of farmer represent the capacity, scope of mind and life experience which probably affect the catching ability to provided new idea, practices and innovation. Based on the local condition of farmer, the predictors of farmer's entrepreneurship in this research as a control variable are age, educational level, farming experience and farming land size as presented logically in Fig. 1.

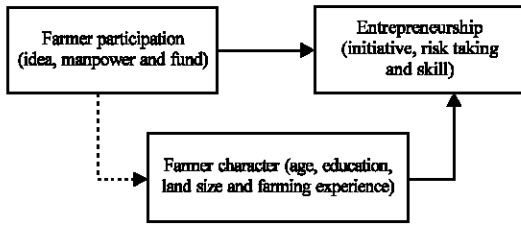


Fig. 1: The conceptual framework of entrepreneurship developmen

MATERIALS AND METHODS

The research is a survey type which tries to conclude the parameter of population on the basis of sample characteristic (Neuman, 1994; Jeffres *et al.*, 2011; Kalof *et al.*, 2008). As a pioneer and merely the view number of farmer group and the participant of AFFS is also limited, the research took total sampling technique. The farmer group location is cikesal village, serang district, banten, Indonesia. The data collection was conducted in June to September 2015. The entrepreneurship is dependent variable and the participation is independent variable while the farmer characteristic (age, education, farming experience and farm land size) is a control variable. If the participation does not contribute to the entrepreneurship, the farmer’s characteristics probably interferes the correlation. The entrepreneurship with three main elements, initiative taking, risk taking and managerial skill is measured by Likert scale in three level of response. Likewise, the measurement of participation-which consists of idea and time devotion, manpower dedication and fund contribution is also in line with the mentioned Likert scale. Unlike the 2 main variables, the farmer characteristics are measured in ordinal scale. Based on the Likert scale, the range of entrepreneurship and participation are as following (Sitopu, 2014):

$$\text{Range} = \frac{\text{The highest score of likert scale} - \text{The lowest score of likert scale}}{\text{The used likert scale}}$$

Based on the formula, the range of entrepreneurship level and participation is $5-1/3 = 1.3$. Consequently, the level of entrepreneurship and participation is lowest (1.0-2.3), moderate (2.4-3.7) and highest (3.8-5). The correlation between participation and entrepreneurship is analyzed by product moment correlation while the contribution of farmer characteristic to the entrepreneurship is analyzed by χ^2 -test.

RESULTS AND DISCUSSION

Characteristic of agribusiness farmer field school member: The participant of AFFS are various on the basis of age, education level, farming experience and farm land size (Table 1). In general, the farmers are in the productive age between 41-55 years; the old age of farmer is no >15%. About the education, it is back to common condition of Indonesia farmer they are low level education. The farmer who gets more than elementary school is only 35%. From this point, the AFFS needs a special approach to make them a learner, awareness of innovation and to get an entrepreneurship spirit.

The farming experience and farm land size need to get a special attention. The successful of extension program in certain case is dependent on the land size and farming experience. In this case, the AFFS members are commonly experienced farmers between 10-35 years of farming holding. About land size, many farmers cultivate more than two hectares which is above the average of farm land size in rural Indonesia.

The participation level of AFFS members: The participation in this research includes idea delivering, time and manpower sacrifice and fund dedication to get successful of paddy seed growing. For ciatel farmer, the idea articulation and fund dedication are indeed low. The farmers are not fully interested in idea delivery to support the AFFS activities as well as the recommendation and opinion in the discussion forum of AFFS. The idea articulation and fund dedication in which they let their paddy field to become a training facility of paddy seed growing-got low scores. The opposite condition is about time and manpower participation. The two kinds of participation proved get higher scores (Table 2).

The entrepreneurship level of farmer: The farmer’s entrepreneurship is good, despite it is not excellence. The average risk taking courage and agribusiness management skill got moderate. Surprisingly, the courageous and risk taking ability get high score which indicates the high ability to face the business risk (Table 3). Indeed, it needs more searching the farmer who has high bravery to invest and ready to get lose although, the risk should be controlled by skill but the bravery is the basic principle needed to start new business, continue and develop existed business activity. The successful of AFFS to develop the entrepreneurship, especially the ability of risk taking is a high achievement.

For more clear, the entrepreneurship is a mental attitude reflects people’s behavior. The successful of business to certain extent is depend upon the mental and attitude. The entrepreneurship in this context consisted of three main elements: initiative and risk taking ability and

Table 1: The distribution of farmers on the basis of social, economy and education

Farmer characteristics/Category	No. of farmers	Percentage
Age (years)		
41-55	85	85
56-65	15	15
Education level		
Incomplete primary school	25	25
Complete primary school	40	40
More than primary school	35	35
Farming experience (years)		
5-9	45	45
10-35	55	55
Farm land size (m²)		
1.500-4.900	55	55
5.000-25.000	45	45

Table 2: Participation level of agribusiness farmer field school members

Kind of participation	Participation score	Participation level
Idea	2.30	Low
Time	4.25	High
Manpower	4.25	High
Fund/money	1.80	Low
Average	3.15	Moderate

Table 3: Entrepreneurship level of agribusiness farmer field school members

Kind of entrepreneurship	Entrepreneurship score	Entrepreneurship level
Initiative taking	3.50	Moderate
Risk taking	4.10	High
Agribusiness management skill	3.70	Moderate
Average	3.76	Moderate

1.0-2.3 = low; 2.4-3.7 = Moderate; 3.8-5.0 = High

agribusiness management skill. The three elements could not be separated each other toward business development. The initiator has the main characteristics of easy business chance catching, always seeing business opportunity, optimistic to face the business challenge and easy to make a business decision. While the management skill is important to control risk taking.

The correlation of participation level to the entrepreneurship: The high participation of AFFS hypothetically affects the entrepreneurship. The study tries to correlate each element of participation (idea, manpower, time and fund) to each aspect of entrepreneurship (initiative and risk taking and management skill). The result is surprising because it got the absence of correlation between each element of participation to each aspect of entrepreneurship. In product moment correlation (Sugiyono, 2009) there are four grades of correlation: very low, low, moderate, strong and very strong. All the aspects of participation pointed out the score of moderate which indicates the non-correlation between the participation and the entrepreneurship. However, the research tries to search the variable affects significantly the entrepreneurship (Table 4).

The variables contribute to the entrepreneurship: The research presented four variables-beside the participation in which it is predicted as the confounding factors which interferes the correlation between participation and entrepreneurship. Because the 4 variables were measured by ordinal scales, the contribution of each variable was traced by chi square test. The analysis revealed the three variables of farmer participation, farmer age and farmer education did not have a significant contribution to the entrepreneurship. The variables which had the significant effect to the entrepreneurship were farming experience and farming land size (Table 5).

In the light of fact it is very important to conclude that the participation has a significant effect to entrepreneurship but it happen indeed merely for the experienced farmer and for the large farm land size owner. By experience they have possessed management skill. By large farming land they have been encouraged to face the business risk. If the risk really happened, it will not place them in economic difficulty and bankruptcy and hence they were bravely to take a risk.

The tailor made of Agribusiness Farmer Field School (a discussion): Based on the research, the entrepreneurship development should be designed and specialized by a certain characteristics related to entrepreneurship potential. The classic researcher of Lionberger (1962) which recommended the segmentation of audiences by personal factors (age, education, psychological characteristics) and social factors (group, family, social clique, reference group and formal group) should get attention to expand human capacity. Likewise, the work of Rogers which suggested segmentation of audiences by socio-economics, personality and communication behavior will pave the way to widen human capacity (Rogers, 1983). However, the paradigm of Rogers and Lionberger’s agricultural extension is a dissemination of innovation in one way traffic of communication but the AFFS is a dialogical model and emphasized on the problem solving and finding the problem originally by the farmer his self.

For more detail, the AFFS should determine the specific target to deliver a farmer as a learner and an entrepreneur who knows the problem, the proper solutions they have to take and the innovation they have to adopt. By the specific target, the AFFS practitioners could follow the Roger’s and Lionberger’s way to identify all characteristics of farmer that will support the target of FFS sharply in certain periods. The identification of need for achievement (n-ach) should get a special attention to develop the entrepreneurship. McClelland’s way to select the diplomat candidates is not based on the language skill, history and the culture where the diplomat will be placed but he emphasized on the n-ach as an individual

Table 4: The correlation of the participation to the entrepreneurship of the farmer

Kind of participation	Initiative taking		Risk taking		Agribusiness management skill	
	PMC	Sign	PMC	Sign	PMC	Sign
Idea	0.182	Very low	0.048	Very low	0.043	Very low
Time	0.081	Very low	0.099	Very low	0.093	Very low

0,00-0,199 = very low; 0,20-0,399 = low; 0,40-0,599 = moderate; 0,60-0,799 = strong; 0,80-1,000 = very strong

Table 5: The variables contributes to the entrepreneurship of ffs participants

Variables	χ^2 -values	Significance
Farmer participation	2.212	0.331
Farmer age	1.823	0.402
Farmer education level	1.878	0.758
Farming experience	4.848	0.028**
Farming land size	5.690	0.017**

**Strongly significance

character. By an-ach the candidate will easily to enrich language skill, culture, history and the custom of the people where the diplomat takes a duty (McClelland, 1993).

The identification and segmentation of the AFFS participants will get practically more clear by pre-test. The implementation of training in AFFS is on the basis of skill, knowledge, attitude and preference which standardized by pre-test result.

CONCLUSION

From the research, the AFFS participants have good entrepreneurship, especially in risk taking ability which get highest score and followed sequentially by management skill and initiative taking. The participation level most likely does not give significant impact to the entrepreneurship. It is actually hindered by farming land size and farming experience which means that participation has a significant contribution to the entrepreneurship merely for experienced farmer who has high size of farming land. The research revealed the need of AFFS tailor made to deliver the farmer to be a learner and fully awareness of problem solving in which it will narrow the knowledge gap and innovation. The conclusion pointed out a recommendation to implement the special design of AFFS suitable with the certain characteristics of the people. It of courses should be started from the small and limited participants and gradually it expands to cover the large size of the farmers.

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