A Review on Farmer Regeneration and Its Determining Factors in Indonesia

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Abstract - Agricultural development in Indonesia is currently focused on sustainable agriculture. However, the number of young farmers in Indonesia is much lower than elderly farmers. This condition raises concerns that over time, the number of farmers will decrease as a result of arduous way in farmer regeneration. This article analyzes the importance of farmer regeneration and the factors determining farmer regeneration through a review of various literatures. Based on the literature reviews, farmer regeneration is very important, particularly when associated with agricultural sustainability. Farmer regeneration depends on the actors as part of the social aspect of agricultural sustainability. If farmer regeneration does not become concern, it can be predicted that agriculture sustainability will become stagnant and even decline. Some foreign and domestic literature studies revealed linkages of regeneration and young farmer generation with other variables both expressly and implicitly. Some of the factors determining agricultural actor regeneration are the characteristics of the young generation, government support, family support, community support, market support, the role of agricultural extension agents, the motivation of the younger generation, and the participation of the younger generation in agriculture.

Keywords - Farmer, Regeneration, Young Farmer, Farm Succession.

I. INTRODUCTION

Agricultural development in Indonesia is currently focused on sustainable agriculture. Sustainable agriculture can materialise equitable and sustainable agriculture, thus it can guarantee demand of food for the current generation without reducing the fulfillment of food demand of future generations. The facts occurring at this time, the implementation of agricultural human resource development that is applied is more focused on strengthening the actor capacities - farmers who are mostly elderly (aging of agriculture) while regeneration efforts gain less attention. In fact, regeneration is a criterion (prerequisite) to achieve sustainability.

The number of young farmers in Indonesia is much lower than elderly farmers. The results of 2013 Agriculture Census (BPS 2013) showed that the portion of agricultural business households based on farmer age groups, over 54, 35-54 and less than 35 years, those are 32.76%, 54.37%, and 12.87%, respectively. The data informs that most farmers in Indonesia are elderly. Compared to the portion of agricultural business households in the age group above 54 years, it is unable to be offset by the portion of agricultural business households in 35 years old age group (32.76% versus 12.87%). The low portion of agricultural households in the age group less than 35 indicates low interest of young generation in the agricultural sector. This condition raises concerns that the population working in agriculture has experienced decline as a result of unsustainable and arduous regeneration.

Concerns about the decline in the population working in agriculture had been proven. The data of BPS (2003) shows agricultural business households is about 31,232,184 of the total households of 56,041,000 or 55.73%. Furthermore, these data of BPS (2013) records agricultural business households around 26,135,469 of the total households of 64,041,200 or 40.81%. Based on the comparison of 2003
statistical data (BPS 2003) to 2013 statistical data (BPS 2013), it is proved that in the last 10 (ten) years, there has been a drastic decline in agricultural business households.

If the analysis of BPS data that has been described not taken seriously, it will lead to the continuously decline of farmers in Indonesia. For this matter, it is necessary to regenerate farmers. The urgency of regenerating actors in agricultural sector is also closely related to the fact the low valuation (under value) and low participation of youth farmers in agricultural sector. Stagnation of regeneration, elder farmers and low assessment of young generation on the agricultural sector has resulted in lack of qualified young workers in agricultural sectors and rural areas. In fact, the availability of qualified human resources is vital in order to run agriculture based on science and technology. Paying close attention at the urgencies of regeneration, it is very clear that regeneration innovations of actors in agricultural sector (or agribusiness) are an urgent need, both to grow and develop agricultural human resources, and to regenerate agricultural and rural development actors as entirety. The regeneration in question is of sustainable value, which enables it to be solution to solve problems of inequality in development, aging of agriculture, and under value.

This article aims to analyze the importance of farmer regeneration and the factors determining farmer regeneration through various literature reviews.

II. THE IMPORTANCE OF FARMER REGENERATION

Farmer regeneration and inheritance of agricultural enterprises is increasingly regarded as complex phenomenon which not only affects the core dimensions of the life of farmer family but also the wider agricultural sector. Transfer of intergenerational agriculture in particular is increasingly seen as a basis for sustainability and global agricultural development (Leonard et al. 2017). Farmer regeneration is a prerequisite for the materialization of sustainability (Setiawan et al 2015b, Joose and Grubbstrom 2017). Farmer regeneration is becoming an issue s widely discussed in various countries such as in Europe (Zagata and Sutherland 2015, Leonard et al. 2017, Joose and Grubbstrom 2017), China (Ha et al. 2009) and Indonesia (Setiawan et al. 2015a, Setiawan et al. 2015b). According to Inwood and Sharp (2009) farmer regeneration is also crucial issue in rural-urban relations. Regeneration plays an important role in business socialization and adaptation. Regeneration is also a strategic key for households in managing risks and business expansion.

Some experts have stated an understanding of farmer regeneration. Farmer regeneration is often used the term of farm succession (succession) (Zagata and Sutherland 2015, Leonard 2017) and farm inheritance (Leonard 2017). Zagata and Sutherland (2015) interpret farmer regeneration as a process of consistently presenting substitute actors related to agricultural business. Sottomayor et al. (2011) stated that farmer regeneration is needed to find replacements for farmers who enter unproductive periods. Lobley and Baker (2012) define farmer regeneration as a process that involves active planning for the transfer of agricultural assets, and the socialization of potential substitute actors. Leonard (2017) synthesizes some literatures and concludes that farmer regeneration is the entry of family members or newcomers professionally into agricultural businesses.

Farmer regeneration is very important to consider several reasons. Zagata and Sutherland (2015) stated that farmer regeneration is important because farmers are aging. Farmer regeneration has become an important issue in Europe because some farmers are elderly (Zagata and Sutherland 2015, Leonard 2017). Some research results report that the average age of farmers in the United States is 57 (Mills-Novia 2011) and countries in Europe is 65 (Zagata and Sutherland 2015). Indonesia based on BPS (2013) shown that portion of farmers based on age group consisting of age above 54, 35-54 and less than 35 years were 32.76 percent, 54.37 percent and 12.87 percent, respectively. Those data informs that most farmers in Indonesia are elderly. When compared to above 54 years age group farmers, it was impossible to be balanced by less than 35 years age group farmers (32.76 percent versus 12.87 percent).

Another important reason is the number of young farmers is getting smaller because of the lack of elder generations leaving their agricultural businesses to the younger generation so that the regeneration is low. This condition causes no comparison between young farmers and elderly farmers. In most European Union countries, the average age of farmers increases, while the number of farmers under 40 years is declining (Zagata and Sutherland 2015, Leonard 2017). The condition is known occurred in Indonesia after comparing the BPS data in 2003 to BPS data in 2013 concerning farmer households. The BPS data in 2003 presented 31,232,184 farmer households from a total of 56,041,000 households or 57.53 percent. Furthermore, BPS data in 2013 recorded farmer households is 26,135,469 of the total households of 64,041,200 or 40.81 percent. Based on the comparison of 2003 statistical data (BPS 2003) with 2013 statistical data (BPS 2013), it is proved that in the
last 10 (ten) years, there has been a drastic decline in farmers around 15 percent.

Furthermore, a world that is increasingly global and a more competitive market leads farmers to be productive and efficient to work in this sector. Leonard (2017) reveals that generally these young farmers have these characters. Thus, there are concerns that this demographic trend may have a negative impact on the agricultural industry because young and middle-aged farmers are associated with more efficient and effective production practices. Thus farmer regeneration is important.

Farmer regeneration barriers have been reported by researchers. Leonard (2017) suggests that farmer regeneration is hampered due to low land mobility. The case in Ireland, agricultural land mobility is very low, unclear retirement patterns, capital accumulation between elderly farmers who are afraid of their financial future and unwillingness to transfer their agricultural businesses (Matthews, 2014). Furthermore, pension assistance for agriculture provides direct payments to farmers, is financially beneficial but has downside which is elderly farmer maintaining his agricultural land rather than selling it or passing it on. Result in the agricultural sector is dominated by elderly farmers, with access for young farmers becomes lower (Leonard 2017).

Several efforts to support farmer regeneration have been reported. Zagata and Sutherland (2015) inform that countries in Europe seek to raise young farmers with a consistent approach by accepting assistance with conditions under 40 years old, first holding an agricultural business, having skills as well as competencies and submitting business plan. Government support includes modernization, ownership of agriculture, early retirement, training and information on food quality as well as cooperation in the development of new products, processes and technology in the agricultural sector. Furthermore, Davis et al. (2009) reported another effort, namely the Agricultural Early Retirement Scheme (EFRS) is one mechanism that has been used in an effort to reduce the average age of farmers and increase the entry of young farmers. The scheme is optional and is mainly taken by Ireland, France and Greece. In the UK, Ingram and Kirwan (2011) stated that the results of the evaluation showed that the early retirement scheme for these advanced farmers was suitable as a means of giving young farmers start an agricultural business and the strategy for elderly farmers to exit the business gradually. Likewise with the case in China, efforts to regenerate actors in the agricultural sector are carried out by pensioners. Elderly farmers (more than 60 years) who are considered as unproductive and have stopped from their activities, have been replaced by young generation. Retired farmers are given monthly incentives (living expenses) by the government. Generations that continue the business to be given high access to strategic agricultural resources (training, capital, science and technology, markets), thus they become more productive (Ha et al. 2009).

Several farmer regeneration scenarios were proposed by Leonard (2017). Firstly, farmer regeneration due to transfer on death. In this scenario, the farmer retains ownership and uses all agricultural assets till passed away. Farmers are reluctant to release business ownership with the lure of financial security and pension income, that is, farmers obtain pensions and farm income. At the death of the farmer, his successor will inherit all agricultural assets. This scenario is not uncommon in agriculture with farmers often being very reluctant to retire because of one reason for reduced income at retirement. Therefore, in the case of this scenario the farmer income should increase at the age of 66 year old as result of agricultural and retirement income combination. Thus, there will be little incentive for farmers in this situation to transfer agriculture before death. Second, farmer regeneration with equity participation and receive pension (destocking and retaining payment). In this scenario, the elderly farmers retire and hand over the agricultural business to their successors by receiving the share of their agricultural business. This scenario has run on beef cattle and dairy farming.

The farmer regeneration process can also be seen from the transfer of agricultural business management. Joose and Grubbstrom (2017) suggest that regeneration through the transfer of agricultural business management can be family and non-family regeneration. Family regeneration means that the management of agricultural businesses is inherited from parents to their children (Inwood and Sharp 2012, Joose and Grubbstrom 2017). Regeneration can be expressed as an important event in the development of family agriculture. Regeneration is a critical point because agricultural families must decide whether farming will continue in the hands of the family. Thus, regeneration forms a logical moment for agricultural families in contemplating and thinking about agricultural businesses sustainability (Inwood and Sharp 2012) Regeneration of family farmers often takes several years. At that time responsibility, ownership and shifting labor input occur from retired farmers to their successors (Fischer and Burton 2014). At the time of regeneration, often the retirement compares between the positions occupied by the new actors.
and elderly farmers in terms of managing labor and decision making hierarchically. The occurrence illustrates the existence of a substitute gradually rising while its predecessor dropping. During regeneration, the successor will be assigned more responsibility in the work process and decision making as well as socialized about good farming. The importance of farmer regeneration continuity is at the stage of structuring in this socialization. Thus, regeneration of family farmers forms agricultural practices and secures agricultural sustainability (Joose and Grubbstrom 2017).

Furthermore, regeneration of non-family farmers. In this process, agricultural inheritance shifts to individuals who do not have family relationships. For the second successor this is often referred to as a newcomer farmer. Newcomer farmers without family ties have not undergone socialization process. Newcomer farmers may depart from previous agricultural practices to a higher level. Regeneration of non-family farmers contributes to bringing changes to agricultural development such as: introducing new knowledge or techniques; develop new business models, develop more sustainable farming systems, develop new organizational models, improve the relationship between agriculture and local communities and use traditional knowledge to develop business innovation. Newcomer farmers are considered more capable to experiment with new approaches, because they are not limited by socialized agricultural norms (Joose and Grubbstrom 2017). The explanation illustrates that the regeneration of non-family farmers is thought to bring changes and innovations to agriculture and agriculture in general. Although positive causal relationship between change and newcomers is a key thesis (Zagata and Sutherland 2015) and regeneration is considered important for agricultural businesses sustainability (Mishra et al. 2010).

Based on the approach, farmer regeneration can be done with 2 (two) types. Inwood and Sharp (2009) identified two regeneration approaches, namely the type driven by outsiders (adoption) and the type driven by the community itself (adaptation). The first type is called base succession and the second is called unplanned regeneration. This type of adoption is driven by facilitators, counselors, consultants and extension agents (government, private and self-help), while the type of adaptation is divided into four types. First, expander (farming expansion efforts through land improvement). Second, reinforcement (agricultural transition towards developing high-value crops on the same land). Third, collectors (family members who collect production, process and marketing play a role in family-based agribusiness development efforts). Fifth, business group binder (binding complementary, yet independent agricultural entrepreneurs work together to create production pensions on the same land).

Farmer regeneration efforts in Indonesia are carried out in a planned manner (extension and empowerment of agricultural youth) since the Dutch colonial era. Starting from the Low Agricultural School (SPR), it later became the Public Farmer School (STR) and Youth Farmer Course (KPT). The aim was to increase the agricultural knowledge of young people in order to become dynamic modern farmers, easy to receive advice and suggestion from the Agriculture Bureau, so that young people can become agricultural cadres in their village. After independence, farmer regeneration was carried out through the formation of farmer-fisherman youth groups (agricultural cadetship), Saka Taruna Bumi (Scouting), youth farmer exchanges abroad, PHT Field Schools and apprenticeship programs (Hasansulama, 2005). Several rural youth empowerment programs were also implemented by Ministry of Youth and Sports and Ministry of Agriculture, such as Village Building Undergraduate Program, Extension, Indonesia Mengajar (Setiawan 2012b; Baswedan 2012). Regeneration efforts were also carried out by FAO, ILO and UNESCO (2009) through the empowerment of young farmers. In addition, after stopped in regional autonomy era, Ministry of Agriculture one again was cognizant of farmer regeneration importance with the support of the policy issuing Minister of Agriculture Regulation Number 07/Permentan/OT.140/1/2013 concerning Guidelines for Development of Agriculture Younger Generation.

Based on the description of the various literatures, it can be stated that farmer regeneration is very important. More importantly if the farmer regeneration is linked to agricultural sustainability. Farmer regeneration is in the hand of the actors as part of the social aspect of agricultural sustainability. If farmer regeneration does not become concern then it can be predicted that agriculture sustainability will be stagnant and even will experience decline.

III. FACTORS DETERMINING FARMER REGENERATION
A. Government Support

Historically, regeneration approach first implemented was the development of young generation in the countryside through extension. Savile (1978) states that the young generation development is required to increase life attractiveness in rural areas, as well as increase the knowledge and interest of young generation in technology
application and farming improvement in their areas. The most famous agriculture young generation development in the United States is 4-H Clubs which aims to educate rural young farmers, both in the economic, social and recreational fields to regenerate predecessor farmers. The term 4-H itself stands for Head (the head used for clear and responsible thinking), Heart (a clean heart to understand and appreciate life), Hands (hands to work well) and Health (health to shape the body to work and manage the farm). This approach effectively increases the interest of young generation in the United States to work in agricultural sector. Savile (Hasansulama 2005) stated that the most successful generation of farmers were alumni of 4-H Clubs who plunged professionally as farmers.

Some programs to empower rural youth have also been implemented by Ministry of Youth and Sports and the Ministry of Agriculture. The youth development program that now produces many reliable farmers in various regions in Indonesia is Farmer Youth Internship Program to Japan. PHT and PTT Field Schools also generated many successful farmers and innovator farmers (Hasansulama 2005). The independence of apprenticeship alumni to return and work rationally in their home region is the key of fate changed, self-image and farmer sustainability. The problem is, most educated youth in agriculture are reluctant to return and become rationally entrepreneur in their home regions. Ironically, most of them are actually pushing for employment and some are trapped in urban unemployment. At the same time, the role and function of extension in empowering development actor generation in the countryside continues to weaken extension agents become older. Formally, the existence of agricultural education, both Agricultural Vocational Schools and agricultural higher education, lacks of priority from young generation. Although youth empowerment policies and programs have increased in regional autonomy era, their implementation in rural areas remains weak (Manuwoto 2002, Dault 2008).

Some activities for farmer regeneration also began to be pioneered by Ministry of Agriculture such as Young Agricultural Entrepreneurs (WMP). The WMP activity targets the young generation both young farmers in the countryside and students of agricultural studies. WMP is implemented in West Java, Ministry of Agriculture in collaboration with universities such as IPB (Bogor Agricultural University), UNPAD (Padjadjaran University) and Bogor STPP (Agricultural Extension College). Some of the WMP activities carried out included entrepreneurship training, technical training and business capital assistance as well as facilities and infrastructure (Ministry of Agriculture 2016).

In relation to some government alignments that have been initiated or have been running long enough that targeting the younger generation should be able to influence the increase of young farmer-entrepreneurial capacity. Activities such as entrepreneurship and technical training are non-formal education and internships are informal education which according to Ledwith and Reilly (2014) can increase entrepreneurial capacity. Likewise with the help of business capital and infrastructure facilities can be a stimulus for recipients to be able to develop their business (Trell et al. 2014).

B. Family Support

Regeneration of actors in the form of transferring agricultural business management often occurs in farmer families. Regeneration of family farmers means that agricultural business management is inherited from parents to their children (Inwood and Sharp 2012, Joose and Grubbstrom 2017). When farmers grow older, there is a critical decision-making point about who is the business successor (Inwood and Sharp 2012). Regeneration of family farmers often takes several years. At that time responsibility, ownership and shifting labour input occur from retired farmers to their successors (Fischer and Burton 2014).

Parents have a role in transforming young people into farmers and becoming agriculture entrepreneur. The role of parents is expressed by Joose and Grubbstrom (2017) which includes respect, socialization and inheritance. First, respect was expressed by Kuehne (2013) and Joose and Grubbstrom (2017) as important factors in the regeneration of family farmers. In the process of transferring the family business, new farmers and retired farmers must find a balance between guidance and independence, where both parties respect each other’s knowledge and skills. Many young farmers and even agricultural college alumni have clear plans to change agriculture (Grubbstrom et al. 2014). When young farmers take over the business, they can expand the business but this change does not radically change agricultural direction. In the contrary, because of an implicit or explicit attitude of respect, agricultural businesses are integrated in the direction taken by retired farmers. Successor farmers tends to contribute in renovating, modernizing, diversifying or enlarging agriculture today (Joose and Grubbstrom 2017).

Second, socialization support. Socialization support has been recognized as an important vehicle for the learning
process and the transfer of knowledge and skills from parents to their children both on agriculture and animal husbandry (Joose and Grubbstrom 2017). In the research of Joose and Grubbstrom (2017) it was found that the successors of family agriculture, including students, helped their parents on the farm. When family successors help their parents, so far the conditions vary. Some successors help only during busy time while others are labor. Likewise, some receive wages after helping them and others do not receive compensation. Helping parents is described as a child's obligation and as a cheap labor force that is important for agricultural survival. However, in the process of helping, there has been a socialization process of agricultural business from parents to the next generation. The socialization process can foster interest and motivation as well as develop business capacity.

Third, inheritance. Joose and Grubbstrom (2017) suggest that agricultural inheritance consists of tangible assets and intangible assets. Intangible assets can be agricultural buildings, flock and land. This tangible asset is the basis of previous agricultural activities that can be passed on to the next generation. Furthermore, intangible assets, for example is social networks and professionalism. Agriculture is highly dependent on relations with outside agricultural actors such as farmers who can rent land, share machines with other farmers, hire mechanics, use banking and advisory services, and so on. The way in which agricultural work has been held before, previous experience of working with farmers and previous agreements was made, creating hopes of collaboration with newcomer farmers. On the other hand, this clearly gives newcomer farmers an easy starting point, because the required network has been mapped. On the other hand, family successors report feeling trapped in the same conditions as their parents. Inheritance can be in the form of transfers of capital assistance as well as facilities and infrastructure.

C. Community Support

Farmer regeneration through young farmers transformation is determined by community support. The community can be real communities (Secundo et al. 2017) and virtual communities (Sankaran and Demangeot 2017). Real community as conveyed by Secundo et al. (2017) that the inspiration to try becoming an farmer can be through entrepreneurship learning process in the community that involves entrepreneurs, experts and learners in study groups. Real communities are other individuals who can be colleagues, mentors, practitioners who can meet directly. While virtual communities such as those conveyed by Sankaran and Demangeot (2017) are other individuals who are connected virtually through social media. According to Anwarudin (2017), the targeted young generation to become young farmers are generation Y who were born around 1981-1994, and generation Z who were born in the range of 1995-2010. This generation is a generation having interest in information technology and social media.

However, both real communities and virtual communities have the same role, namely socialization and information transfer. Socialization is a learning process. Through community, young generation will be familiar to agricultural business in order to gain knowledge. Real communities not only provide knowledge, but also can be directly involved in the practice thus farmers may gain the skills. Next is information transfer. Through the community, farmers gain information, particularly in commodities and market opportunities (Secundo et al. 2017, Sankaran and Demangeot 2017).

D. Market Support

Entrepreneurship is increasingly becoming global phenomenon, although its nature, extent and contribution to economic development vary according to the context in which it occurs. As person with entrepreneurial spirit, young farmers need market (Lepoutre et al. 2013, Massetti 2008, Tracey and Jarvis 2007). Most entrepreneurial development has occurred in stable market conditions (Bruton et al. 2008). However, there is still a new perspective on the role of entrepreneurship and its contribution to economic and social development related to emerging markets (Smallbone et al. 2013).

The availability of markets can open opportunities for the community. Benito et al. (2009) and Chen et al. (2009), suggest that there is a strong relationship between entrepreneurship and market orientation. Sato et al. (2012) reports in more detail that the market is widening, affecting the entrepreneurial potencies and even sustainable entrepreneurship (Cohen and Winn 2007). Society becomes innovative in identifying opportunities (Zahra et al. 2008) to create and develop new businesses (Zaefarian et al. 2015, Kuratko et al. 2011, 2012).

E. The Role of Agricultural Extension Agents

Role is dynamic aspect of position or status (Narwoko and Suyanto 2013, Soekanto 2015). Role can also be interpreted as expectations imposed on individuals or groups that occupy a particular social position (Berry 1995). Riana et al. (2015) adds that expectations are imposed on individuals or groups to carry out the rights and obligations
Agricultural extension agents are currently suspected to consist of government extension agents, independent extension agents and private extension agents. The Law Number 16 of 2006 states this clearly in Article 1. The government extension agent consists of extension officers of Civil Servants (PNS) and Daily Source Officers (THL). Self-help extension agents are the main actors who succeed in their business and other community members who, with their own awareness, are willing and able to become extension agents. Private extension agents are extension workers from the business world and / or institutions that have competence in the field of extension. The existence of government extension agents has become the spearhead of agricultural development since Orde Baru (New Order) (Sumardjo 1999)) and so do private extension agents (Syahyuti 2014 and Anwarudin and Haryanto 2018).

The role of extension agents is indicated to influence the entrepreneurial capacity of young farmers. The statement is based on the importance of someone’s role to influence one's behaviour (Narwoko and Suyanto 2013, Soekanto 2015). Previous research suggests that farmer capacities are increasing as a result of extension agents conducting their roles (Sumardjo 1999, Fatchiya 2002, Yuliani et al. 2012, Riana et al. 2015, Setiawan 2015, Anwarudin and Haryanto 2018). This is related to extension activities carried out in the community. The target of education is adult farmers, women farmer and agricultural cadets (Van den Ban and Hawkins 1999). Ministry of Agriculture (2009) and Law Number 16 of 2016 state that extension targets are the main actors and business actors. Some of the main actors and business actors may be young farmer who are directly involved in agribusiness.

F. Motivation of Young Farmers

The study of motivation has long had its own appeal for educators, managers, and researchers, particularly in relation to the interests of efforts to achieve one's performance (achievement). Motivation comes from the words motive or need, is the main impulse of a person to do activities or strength from within that encourages someone to do something (Hersey and Blanchard 1982). Motivation can also encourage someone to act in a certain way through actions that lead to achieving one's goals. Within a person, there are two types of power as motivational drivers; First, the positive strength (desire, passion, or need) that drives a person towards a particular object or condition; The second is negative (worry, dislike or reject) that drives a person away from certain objects or conditions. Motivation is also an important factor in encouraging competencies formation.
Makmun (2003) argues that to understand individual motivation can be seen from several indicators, including: (1) duration of activities; (2) frequency of activities; (3) persistence in activities; (4) fortitude, tenacity and ability to deal with obstacles and difficulties; (5) devotion and sacrifice to achieve goals; (6) the level of aspiration to be achieved by the activities carried out; (7) the level of achievement qualification or product (out put) achieved from the activities conducted; (8) attitude direction towards the target.

McClelland's need theory divides three needs, namely achievement needs, which is an urge to surpass and wrestle for success, power needs, efforts to make others follow their behaviour, and affiliate needs, as a desire for interpersonal relationships, desires to be valued, and feeling important. Cognitive evaluation theory divides extrinsic rewards for previous behaviour tends to reduce the overall level of motivation. The determination of goals theory in respect of particular and specific goals tends to be difficult to achieve higher performance. Furthermore, reinforcement theory holds that behaviour is a function of the consequences.

According to the theory of justice, individuals compare input from their work output with the input or output of others to make particular response. So this theory emphasizes that individuals not only care about the absolute rewards received, but also relate to what others receive. Meanwhile, expectation theory is defined as the strong tendency to act in a certain way depending on expectations. This theory focuses on three forms of relationships namely; effort-performance relationship, where individuals assume that every effort made will encourage performance, performance-reward relationships, where individuals believe each performance at a certain level will encourage the achievement of the desired output, reward-goal relationships, the extent to which rewards can meet goals. Thus, the expectation theory assumes that motivation is a manifestation of a person's desire to complete a task in the hope of getting reward. From the above description, it can be concluded that the priority needs are related to motivation.

Everyone tends to develop certain motivational patterns as a result of interaction with their environment. In this regard, Davis and Newstrom (1996) reveals that individual motivational pattern is an attitude that influences the way people perceive work and live their lives. Further explained there are four important motivational patterns, namely: (1) Achievement (achievement motivation); namely encouragement in a person to overcome all challenges and obstacles in an effort to achieve goals. Achievement oriented workers, are characterized by hard work and personal pride of achievements.

If as a manager, he tends to trust subordinates, accept ideas openly, set high goals, and encourage subordinates to excel; (2) Affiliation (affiliation motivation); is the urge to connect with people on a social basis. Characteristics of workers who have affiliate motivation are working better when they get advice, choose people around them, and build good relationships at work; (3) Competence (competence motivation); is the drive to achieve work excellence, improve problem solving skills, and strive to be innovative; and (4) Power (power motivation); is the drive to influence people and change the situation.

According to Robert (1974), a person's work motivation can come from incentives, in the form of: rewards (bonuses, profit sharing, charter, placards and so on); social prestige (building social relationships, happy to socialize, trustworthy desires, and stronger or more powerful); achievement, namely the fulfillment of self-actualization, the desire to exceed others, more successful desires; and personal pride (status in society, feeling respected, cared for, feeling important, and valued). A person's work motivation, according to Accel-Team (2008) can be encouraged through seven strategies, namely: (1) generating hope, (2) enforcing discipline and sanctions, (3) creating sense of fun, (4) meeting the needs of employees, (5) employee placement in accordance with the objectives, (6) improve the work atmosphere, and (7) performance-based awards.

The motivation of the young generation determines farmer regeneration. KRKP research (2015), Anwarudin and Haryanto (2018) report a young farmer pursuing agriculture because of motivation. Based on the literature review, motivation focuses more on the internal motivation of the young generation that is grown by external factors as external motivation. The motivation of the young generation in agriculture grows after seeing their peers succeed in agriculture or driven by examples of the success of self-help extension agents.

G. Participation of Young Farmers

Participation is the involvement of someone in an activity as an action to "take part" of the activity with the intention of obtaining benefits (Mardikanto, 2009). Community participation in development according to Slamet (1994) can be interpreted as community participation in development, participating in development activities, and participating in utilizing and enjoying the results of
development. Mardikanto (2009) explained about participation starts from understanding, the nature of community participation in development, the scope of community participation in development, forms of community participation and conditions to develop community participation. The general understanding that can be captured from the term participation is the involvement of a person or group of community members in an activity. Bornby (1974) in Mardikanto (2009) for example, defines participation as an act of "taking part" namely an activity or statement to take part in an activity with the intention of obtaining benefits. While in the sociology dictionary, it is stated that participation is the involvement of someone in a social group to take part in their community activities, outside of their own occupation or profession.

Slamet (1994) suggests the classification of participation based on volunteerism degree. There are two forms of participation based on volunteerism degree, namely free participation and forced participation. Free participation occurs when a person engages himself voluntarily in a particular participatory activity. Free participation can be divided into two sub categories: spontaneous participation and persuaded participation. While forced participation is the involvement of someone in an activity because of coercion from another party, regulation or law and when not participating it will subject him and his family to a difficult position. Karsidi (2004) adds that community participation can be done voluntarily, directly or indirectly in all activities from planning till obtaining the benefits, organized implementation of intensive participation, in the scope of all development activities types effectively and carried out by various levels of community according to their potencies and the ability of each member of community.

Based on the review of the definition of participation above, it can be concluded that participation or involvement is basically a form of active and voluntary involvement and participation, both for reasons from within (intrinsic) and extrinsic in the whole process of related activities, which includes: decision making in planning, implementation, control (monitoring, evaluation, supervision), and utilization of results of activities achieved. Therefore, Yadav (UNAPDI, 1980) in Mardikanto (2009) suggests that there are four types of activities that show community participation in development activities, namely participation in: decision making, activity implementation, monitoring and evaluation, and participation in the utilization of development results.

Hikmat (2006) suggests that participation is an important component in generating independence in the empowerment process. Ofuoku and Isife (2009) convey the need for adoption in participatory planning for all stakeholders in order to build reputation. Pali et al. (2015) stated about monitoring and evaluating participation in society which is a tool for empowering local poor farmers to improve their welfare. This places people as a center that describes the capacities of local communities toward the importance of technology. Furthermore, it was also explained that monitoring and evaluation of participation was an internal activity of the community to assess group activities that had been carried out. Thus there will be appreciation as an empowerment tool in terms of initiative, control and correction of activities, financing effectiveness as well as more accurate and relevant activities.

The low presence and participation of qualified young generation in the countryside is a major trigger for inequality development and critical-crisis in rural areas in developing countries. Participation is related and influenced by the younger generation characteristics (Muksin et al. 2008, Syairullah 2009, Setiawan et al. 2015a, Setiawan et al. 2015b, Hamilton et al. 2015), the younger generation motivation (Savile 1978, Hersey and Blanchard 1982, Zagata and Sutherland 2015), the role of extension agents (Soewardi 2004, Hasansulama 2005) and government policy influences youth participation (Hasansulama 2005, Zagata and Sutherland 2015). Several studies report participation affects farmer regeneration (Dumas et al. 1995, Setiawan et al. 2015a, Setiawan et al. 2015b).

H. Entrepreneurial Capacity

Capacity has meaning as existing ability, capability, and capacity. Capacity is introduced for objects of people, both as individuals, groups, organizations and communities (Fatchiya 2010). Yu (2013) defines capacity as the presence of characteristics needed to support community development. Capacity building can be done through policies, strategies, or actions taken to enhance the group's collective efficacy in improving learning through new knowledge, increasing resources, and greater motivation for people who work individually and in team. Capacity building is not only a concept but also a series of strategic actions to build learning community to improve the implications of human and technical resources for better individual interests. Stoll (2009) claims capacity is mind habitual to engage in and maintain individual learning at all system levels for collective purpose in order to improve better conditions.
The concept of capacity building basically refers to “helping people to help themselves” (Yu 2013). Ashby et al. (2009) suggests that farmers need capacity in the form of skills classified as follows: (1) basic group management skills; (2) financial management skills (usually developed despite internal savings and loans); (3) basic marketing skills; (4) experimentation and skill innovation (to access new technologies); and (5) sustainable production and natural resource management skills. A set of skills is defined by understanding how to do the following: base group management; financial management; market involvement; experimentation and innovation to access new technologies; and sustainable production (including increased natural resources management). Yu (2013) adds capacity by advancing character building at the individual level, advancing building partnerships at the institutional level, and promoting social responsibility at the community level.

Suryana (2016) reveals that entrepreneurship can be as a value, ability, process and effort. Entrepreneurship is a value that is manifested in behaviour used as resources, energy, goals, strategies, tips, processes and business results. Entrepreneurship is the ability to create something new and different. Entrepreneurship is defined as the process of applying creativity, and innovation in solving problems and finding opportunities to improve life/business opportunities. Entrepreneurship also means an effort to create added value by combining resources through new and different ways to win the competition. Frese and Gielnik (2014) states that entrepreneurship is a process that has three phases: (a) prelaunch or opportunity identification phase, namely someone identifying the feasibility of business opportunity, (b) the launch which is a launch or development phase and implementation which is someone assembles resource that needed to start a business, and (c) postlaunch is an entrepreneur managing new business in such way as to grow and survive.

Someone who has an entrepreneurial spirit has personal leadership. Personal leadership seems to blend with many entrepreneurial characters (Brixiova et al. 2015) which is reflected in several general characters (Suryana 2016) and other characteristics (Frese and Gielnik 2014). Some of the general characteristics include (1) motivation to get high achievement (Suryana 2016, Freese and Gielnick 2014), (2) future perspectives (Suryana 2016), (3) high creativity, (4) high innovation behavior (Suryana 2016, Freese and Gielnick 2014), (5) commit to work (Suryana 2016), (6) responsibility, (7) independence from others, (8) dare to face risks (Suryana 2016, Freese and Gielnick 2014) and (9) always looking for opportunities (Suryana 2016). The other personalities of a person who has an entrepreneurial spirit are proactive, tolerant to stress (Freese and Gielnick 2014, Rauch and Frese 2007), openness to experience and friendliness (Freese and Gielnick 2014).

IV. CONCLUSION

Based on an analysis of various literatures, it can be concluded as follows:

1. Farmer regeneration is very important particularly when associated with agricultural sustainability. Farmer regeneration depends on the actors as part of the social aspect of agricultural sustainability. If farmer generation does not become concern, it can be predicted that agricultural sustainability will become stagnant and even decline. Some foreign and domestic literature studies reveal the linkage of regeneration and farmers young generation with other variables both expressly and implicitly.

2. Some of the factors determining the agricultural actor regeneration are characteristics of young generation, government support, family support, community support, market support, the role of agricultural extension agents, the motivation of young generation, and the participation of young generation in agriculture.

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