Engagement of the Youth in Future Agriculture: Strategies for National Food Sovereignty

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インドネシアでも農業従事者の平均年齢は52歳、若者の農村離れも深刻だ。2億を超す人口を抱えるこの東南アジアの大国で、将来の食料安保・食料主権を確保し、若者が農業に希望を見出せるようにするための社会的条件と政策課題を探る。

Abstract

The youth in rural areas is the future of food sovereignty of a nation since they are the successor of the family farming business that brings 80 percent of the world's food production. Unfortunately, many that young population prefers to go to the cities and escape from agriculture. Data shows only 4 percent of farmer's children in Central Java eventually become a farmer. Contemporary, agriculture is been populated by the old farmer with an average age of 52 years. Indeed, agriculture always requires innovation to deal with rapid changes in the rural environment. In this concern, the youth will be the principal actor to adopt those changes. This study aims to map issues of food agriculture that cause young people to abandon rural life and to formulate policy alternatives in preventing farmer regeneration crisis. Data was obtained through in-depth interviews with 150 households in 3 rice-growing villages (Sragen, Klaten, Sukoharjo) and seven young farmers from Yogyakarta, Salatiga, and Garut. The study reveals that rural youth face many hurdles to earn a livelihood in agriculture. Lack of land access, income uncertainty, and dependence on chemical fertilizers are reasons which cause agriculture to become unattractive for the youth. Some policy strategies have been offered to engage the youth in agriculture. Examples include the provision of communal land access for them to conduct organic farming, involving local communities to transfer agricultural knowledge, upgrading their technological skills to access broader markets, expanding the entrepreneurship program in rural and providing farmer incentives in the form of financial assistance.

Keywords Youth; Family Farming; Agriculture; Java Indonesia.

Introduction

In Indonesia, rural development and modernization began in the 1970s which has had an impact on youth's perceptions and aspirations in agriculture. Today, agriculture such as paddy fields are considered dirty, physically demanding and an unfavorable job. One youth study found that most rural youth with higher education prefer to be government employees or work in regular employment in the urban area (Minza, 2014). Rural-to-urban migration is increasing, and agriculture in the countryside is being undertaken by old farmers with an average age of more than 52 years (Agriculture Census, 2013).

The escape of the youth from agriculture has an impact on employment structure in the countryside, not only the aging farmer but also, in the long run, threatening farmer regeneration. Similar conditions occur in other agrarian countries in the world. In the Philippines, the average age of farmers reaches 57

years[1], with a rare tendency for youth to return to agriculture. As well as in developed countries[2] such as Japan and Europe, the average age of farmers has reached 65 years. The same thing is found in African countries, although 65 percent of the youth live in rural areas, they are not interested to working in agriculture (White, 2016; Leavy & Smith, 2010). In the context of food sovereignty, the phenomenon of the youth fleeing from agriculture will be a serious problem that threatens farmer regeneration.

The Indonesian government committed to developing food sovereignty through two policies; agribusiness improvement and farmer regeneration. The program to support these policies are rural economic activities built on agriculture that involve youth so that the average age of farmers is getting younger (*Visi, Misi, dan Program Aksi JOKOWI-JK*, 2014). The presidential policy is implemented by the ministry of agriculture by way of developing the rural agricultural sector. Mechanisims of implementation include securing the availability of water supply, improving the market, utilizing information technology, agricultural corporations, and synergy of all stakeholders at central and regional levels (BPPSDMP, 2017).

Furthermore, the regeneration policy of farmers works explicitly through the Counseling Agency and Human Resources Development of Agriculture in the Ministry of Agriculture (Badan Penyuluhan dan Pengembangan Sumber Daya Manusia Pertanian- Kementerian Pertanian- BPPSDMP). Their two main programs are the Integrated Farmers Empowerment (Gerakan Pemberdayaan Petani Terpadu-GPPT) and the Farmers Regeneration, BPPSDM, which have a purpose of increasing national strategic food products such as rice, corn, soybean, various chili, red onion, sugarcane, cow/buffalo, palm, rubber, cocoa, and coffee, as well as attract young people to work in the field of agribusiness.

Amid the implementation of farmer regeneration policy, the agricultural sector is still dominated by old farmers. Youth migration from rural to urban is increasing and the farmer's child who wants to become a farmer is decreasing significantly. The BPPSDMP's programs should target rural youth who have a firm intention to do business in agriculture, provide not only training but also consider many obstacles such as the lack of land, lack of market access, and the lack of entrepreneurship skill. My question to be asked in this article is how to involve the rural youth through agricultural policy amid the aging agricultural workforce? And how can the farmer regeneration policy in the Ministry of Agriculture integrate with other strategies to support food sovereignty?

The data presented in this article is based on research conducted in 3 rice-growing villages (Sragen, Klaten, and Sukoharjo District) and seven young farmers from Yogyakarta, Salatiga, and Garut District. We[3] used some methods such as focused discussions, workshops, and surveys of 150 households in 2015 and 2016. To get in-depth analysis, we learned the empiric youth agricultural models that have been applied in Salatiga, Kulonprogo, and Garut District.

Figure 1. Map of Research Sites in Java, Indonesia

(Source: *DAS Bengawan Solo Map, taken from Directorate of General Of Water Resources Management, Ministry of Public Works and Public Housing of the Republic of Indonesia, 2010.*)

From Food Security to Food Sovereignty

The food insecurity issue is not a new thing in Indonesia; this awareness has made many institutions and organizations focus on solving food insecurity problems. Most consider the food security crisis caused by fluctuations in prices and food

1 Based on Statistics Data from the Departement of Agriculture Philippines (2013)

2 Farmers' statistics data in Europe are supported in Tascia (2010) and Japan statistical data (Yamashita, 2008).

3 I conducted data collection together with the team from the Research Center for Population, Indonesian Institute of Sciences.

availability. Some of Indonesia's significant foodstuffs are dependent on imports such as rice, soybeans, corn, onions and other food. The Indonesian government has responded by establishing a food security agency and task force staff to monitor food supply and food price movements in the market. Such efforts are intended to ensure the availability of national food and the needs of every citizen.

Criticism of food issues is not only on the availability of food but also includes the social, economic, and political structures of food systems that produce food. This is because food security, in the long run, depends on those who provide food and maintain the environment (White, 2015). This view then led to a conceptual shift from food security to food sovereignty that focuses more on community involvement in food production. La Via Campesina in the Declaration Nyeleni 2016 defines the concept of food sovereignty, i.e.

> *The right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their food and agriculture systems. It puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It depends on the interest and inclusion of the next generation. [.....], It ensures that the right to use and manage our land, territories, water, seeds, livestock, and biodiversity are in the hands of those of us who produce food.*[4]

Pillars in food sovereignty that cannot be ignored as in the above concept include farmer regeneration, as an important element to produce food. Involving rural youth to participate in agriculture means reinforcing food production in ensuring future food supply.

Loss of interest amoung young people to return to the fields would be a threat and create a crisis of farmer regeneration. It could jeapordize the future of rural farming. In such conditions, food sovereignty is threatened as well. At a time when families can no longer produce food such as rice, hence the need for rice is highly dependent on the availability of imported rice on the market. Data from the USDA[5] shows that domestic rice production in Indonesia tended to decrease as much as 6.5 percent from 2008 to 2015, while the domestic rice consumption increased by 4 percent. There is a shortage of 2,700 tons of rice to meet domestic consumption. A significant amount of eating that cannot be supported by domestic production led to the Government of Indonesia to tackle the rice import policy.

Depeasantation

The phenomenon of rural youth who migrate to cities for study or work is increasing. In other words, there is lack of employment available to accommodate the labor force from rural, so that most urban youth work in the informal sector without proper job security. Nearly 70 percent of jobs in 2003 (Nazara, 2010) or those who do not get a job become unemployed in the city.

During the last 44 years (from 1971 to 2015) the average rate of youth unemployment in urban areas reached 15 percent per year and that figure was 9 percent higher than in rural areas. The increasing number of unemployed in the city cannot be separated from the massive flow of youth migration from rural to urban areas. The youth decrement in the rural areas is also responsible for the declining number of labor in agriculture. Over the past 15 years (2001 - 2015) there has been a decline in youth labor in agriculture by 32 percent with an annual rate of 3 percent decline. This condition causes the age of farmers today to tend towards the elderly, 60.97 percent of farmers are aged 45 years and over (BPS-Statistics Indonesia, 2013).

Based on a survey of rural households in Central Java, only 4 percent of children live ruraly and continue to work as farmers like their parents (2% as a farmer and 2% as farm labor). While children who have lived outside away from parents, only 2 percent work as farmers. Although most rural households are farmers, rural youth prefer to work as non-agricultural laborers such as factory day laborers or shopkeepers, with a proportion of 70 percent for live-in children and 47 percents for children living separately from parents (see Appendix on the last page).

The declining number of agricultural labor can be seen as a

4 La Via Campesina 1996, quoted from White, 2015.

5 The United States Department of Agriculture

symptom of depeasantization, which in this study is regarded as a lack of youth engagement in agriculture. The term depeasantization has been alluded to since the 1990s by Hobsbawm as a process of social change which is characterized by peasantry being a minority (regarding numbers of peasants), not only in advanced industrialized countries but also peasants being a minority in agrarian regions. More broadly, global depeasantization is defined as a form of derularization (reduced number of villagers) because of overurbanization, i.e., increased urban activity in the world (Araghi, 1945). Recent research using the term depeasantization refers more to the shifting of agricultural labor out of agriculture as a source of livelihood (Singh & Bhogal, 2014) and the phenomenon of farmers who abandon their agriculture (van der Ploeg, 2008).

Qualitative studies in three research villages show that the reduced youth interest to engage in agriculture based activity is due to limited access to land, reduced agricultural income to meet the economic needs of households, and the high dependence of farmers on government subsidies and production inputs provided by corporations such as seed and fertilizer.

Challenges Faced by the Youth

The Land Problem

Based on our survey in three rice farming villages in Java, the farmers' land area averaged 0.66 hectares. According to farmers, the land of 0.66 hectares is still far from the need more to meet family income, which amounted to 0.9 hectares. At the national level, statistics show that 58 percents of farmers have less than 0.1 hectares, and only 4 percent of farmers occupy more than one hectare (BPS-Statistics Indonesia, 2013). This small farmland owned by farmers causes the pattern of land inheritance from parents to children to be insufficient. Not only the narrowness of the land but also 53.3 percent of the farmers in the three villages are sharecroppers.

Uncertain Income

The net income of paddy farming from three villages in Central Java (Figure 2) is less than Rp. 1 million per month (63 percents of farmers), while the highest income on average only reached Rp. 2 million per month (11 percent of farmers). When compared to other income outside agriculture, the yield of paddy farming is still far below factory workers[6]. The uncertainty of revenue is due to lower selling price[7] at farmer level or decrease of crop yield due to pest attack[8].

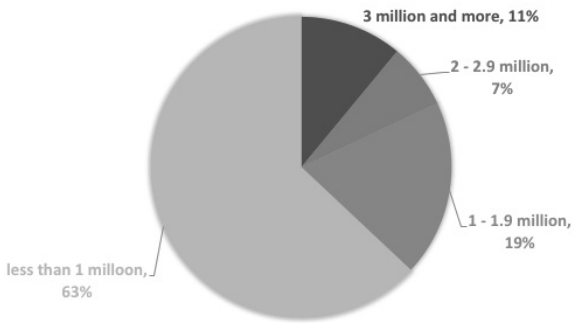

Figure 2. Distribution of rice farm income in Central Java Village (Based on Survey)

Risks of income uncertainty increase due to a small land area, enlarged access land for the farmer can be a strategy to increase their income. Based on the relationship between land and net yield, this study found that 1 percent increase in the land will follow 0.89 percent increase in net yield (Figure 3). This figure indicates that every increase of 1,000 square meters of paddy field will raise the net farmer income around Rp. 700,000.

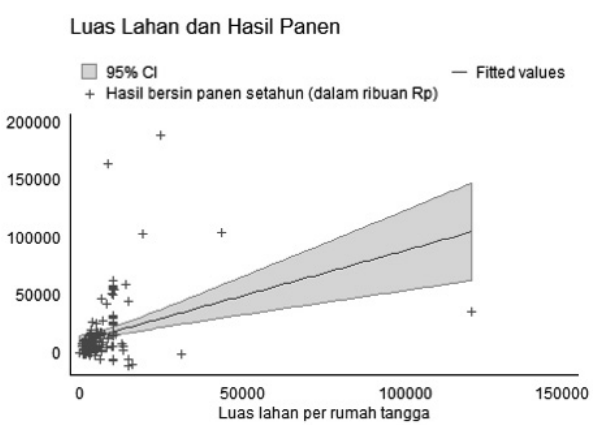

Figure 3. Relationship between Land and Net Yield

6 Factory labor income between Rp. 1.2 million up to Rp. 1.5 million per month.

7 90 percent of farmers sell their crops with a debt-to-collector system, the amount of harvest received by farmers is only based on the collector's estimates, not on the actual harvest quantity

8 paddy fields were attacked by pests since 2011 and caused rice harvest failure

Dependence of Farmers on Chemical Fertilizers

Since the green revolution in the 1980s, farmers have been forced by the government to use chemical fertilizers to increase yields. In the long run, the excessive use of chemical fertilizers reduces soil nutrients that are essential ingredients for maintaining soil fertility. As a result, farmers increase the use of chemical fertilizers more and thus impact the cost of agricultural production. The habit of using chemical fertilizer eliminates the autonomy of farmers who were previously able to produce organic fertilizer for agrarian needs.

In the research location, it is difficult to find the youth who can make organic fertilizer. The rural modernization causes young people who are still in school, spending more time attending education activities than being directly involved in agriculture. The survey showed that 75 percent of rural youth with a secondary education level said that they were not getting farming skills from the school.

Strategy for Engaging the Youth

These three main challenges to engage youth in agriculture require a comprehensive and interrelated approach, not only in the ministry of agriculture but also involve the Ministry of Agrarian and Spatial/National Land Agency (ATR/BPN) as well as the Ministry of The Villages, Disadvantaged Regions and Transmigration (Kemendesa). The interconnecting policies are needed to improve the effectiveness of BPPSDMP's program. So, the system can include enhance skills and knowledge for sustainable agriculture and give access to land and market for rural youth. The proposed policies should consider:

1. Targeting the rural youth in agriculture

The BPPSDMP program is now more targeted to agricultural students and young people who already have advanced agrarian enterprises. The benefits of the program only provide for youth who already have independence while youth with limited land access and agricultural skills still face barriers to becoming farmers. If the farmer regeneration program is more focused for young living in rural areas, then youth migration can be reduced, and the availability of youth labor in agriculture will increase.

2. Making the farmer regeneration program as an agricultural movement and involving many parties

Connecting the BPPSDMP program with the land redistribution program from the Ministry of Agrarian and Spatial/ National Land Agency (ATR/BPN) provides an excellent opportunity for rural youth to gain land and agriculture. They will be trained to conduct sustainable agriculture as well as become agricultural entrepreneurs.

Also, most of the rural areas in Java have land owned by the local government; the local government can encourage the farmer regeneration movement by providing land management to the rural youth to develop farming business.

Several BPPSDMP's strategies to make the farmer regeneration movement are more widespread:

Table 1. Strategies for Youth Engagement in Agriculture

Strategy Components	Interconnection of BPSDMP program with other ministries/ institutions
Land Access	Providing agricultural training programs for rural youth and strengthening rural institutions into agricultural corporations, especially in areas where there is a land redistribution program by the Ministry of Agrarian and Spatial/National Land Agency (ATR/BPN) BPPSDMP and rural government provide rural land access for youth including financing for agriculture.
Empowerment of rural youth	BPPSDMP and the Ministry of The Villages, Disadvantaged Regions and Transmigration (Kemendesa) provide training to utilize agricultural advisory and infrastructure assistance from various ministries and expand the entrepreneurship program in border areas and underdeveloped areas in Indonesia. Trainees are targeted for rural youth.
Strengthen farmer assistance by involving Non-Governmental Organizations (NGO)	Provides a great role for NGOs to assist young farmers to practice organic farming
Involve young farmers in the agricultural chain	BPPSDMP facilitates rural youth to trade agricultural products through the Rural Enterprise (Badan Usaha Milik Desa)

Conclusions

The study result mentioned three main reasons why rural youth are not interested in agriculture and increasing the youth migration from rural to urban. Those are:

1. The lack of land access
2. The income uncertainty from agriculture because of the variability of price and the risk of harvest failure
3. High dependence on chemical fertilizers thus high agricultural cost

Integrated government policies should be created in the rural area. Those strategies are, increase land access for youth, involve youth in all chains of agriculture to get more value-added results, provide organic training, expand the entrepreneurship program, and provide an excellent role for NGOs to assist young farmers in rural settings.

The purpose of these strategies are not only the responsibility of BPPSDMP which exclusively focus on providing training, but the policy should be linked with other ministries such as The Ministry of Agrarian and Spatial/National Land Agency (ATR/BPN) to give access to land. The Ministry of The Villages, Disadvantaged Regions and Transmigration (Kemendesa) can also be involved to strengthen the entrepreneurial institutions in rural areas. Engagement of the youth in agriculture means reinforcing food production, ensuring future food supply and supporting for food sovereignty in Indonesia..

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Appendix

Parents and Children Occupation in 3 Rural Agriculture in Indonesia