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TRANSFORMATION OF MILLENNIAL FARMERS: BETWEEN EXPECTATIONS AND REALITY

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ABSTRACT

As the guardian of food security as well as the pillar of national economy, the agricultural sector has gone through many changes thanks to digitalization. Millennial farmers are expected to have the ability to transform the agricultural system from conventional to contemporary agriculture that farmers should also be competent agripreneurs. This research aimed to examine the readiness of millennial farmers to cope with disruption as well as to analyze their regeneration in realizing agripreneurship for sustainable agricultural development. This research was conducted during August-December 2022 in Bantul and Klaten Regency by applying a critical constructivism approach to farmer informants, extension workers and other related stakeholders. Data was collected through observation, in-depth interviews and focus group discussions. The results indicated that: Becoming resilient millennial farmers in facing the digitalization of agricultural system was done by transforming technology and social media, as well as commodifying agricultural products from food crops to horticultural crops and even extending to the livestock subsector. Networking can also shape millennial farmers with competent agripreneurship. The choice to work in horticulture farming and livestock sub-sectors further strengthens the position of millennial farmers. Following this success can cause social transformation, which can also change the stigma, values, and mindset of the farmer's society. The existence of millennial farmer groups can be positioned as an image medium for the agricultural sector. Millennial farmers can be placed as an image to change the mindset of farmers towards the agricultural sector, and they can be a bridge for senior farmers to see market opportunities for agricultural products. And in the end, agriculture is seen as a business unit, not just a job to fulfill family food needs.

Keywords: *agripreneur, agricultural digitalization, millennial farmers, social transformation*

BACKGROUND

Agriculture is an important sector for Indonesia, with about 12.6% contribution to national GDP and almost a third (29.96%) of workforce employment, dominated (93%) by small farmers. During the COVID-19 pandemic, agriculture was the main sector of the nation. While other sectors dropped, agriculture recorded positive growth of 1.37% (BPS, 2022). Around 275 million people of Indonesia depend on the agricultural sector to fulfill their needs for food. Therefore, it is crucial that productivity, competitiveness and sustainability of agricultural businesses should be maintained and increased. Meanwhile, there has also been a decline in land area and the number of farmers, especially young farmers. From 2017 to 2018, the decline in young farmers reached 415,789 people. This fact

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shows that employment in the agricultural sector is filled by older farmers (the baby boomer generation) with generally low levels of education and low mastery of information and technology adoption, which affects their production and income levels (Muharram, 2021). The lack of farmer regeneration has led to a lack of innovation in the agricultural sector. Senior farmers find it difficult to keep up with technological developments. In the long run, if the farmer regeneration crisis is not taken seriously, it will lead to a food crisis (Suratha, 2015).

The massive increase of technology utilization has led society to enter the disruption era resulting from development of 4.0 revolution, which is marked by the increasingly intense dissemination of information through various media platforms. In Indonesia, the level of ICT uses for agricultural business development, especially in rural areas, is still relatively low (Burhan, 2018). This reveals that human resources in the agricultural sector have not been fully capable in utilizing digital technology. Most farmers, especially older ones, rely on group meetings to get information about an innovation. The existence of farmer groups is a forum that encourages the formation of communication networks between farmers so that they exchange information or experiences (Fatonah et al., 2021). The utilization of ICT in agricultural sector has begun to be carried out by millennial farmers, who are fewer in number than senior farmers. Millennial farmers have begun to utilize ICT as a forum for communication and information exchange, for example through WhatsApp. Social media, the internet, and smartphones are communication tools that can connect individuals (Wang et al., 2020). Internet technology will make information exchange easier and more accurate (Khan et al., 2020). Millennial farmers also utilize You tube and Facebook to find information about input needs, cultivation, pest management, and marketing of agricultural products.

However, to have competitive capability to other sectors, improving human resources quality by enabling them access to important information is essential (Herman et al., 2008). This is in line with (Gandasari & Musyadar, 2017) that dynamic and market demands require response from qualified and competent farmers with managerial and business-oriented mindser as the human resources in this sector. It is expected to establish competent farmers with capability to utilize technology and have good managerial skills. These qualities cannot be expected form senior farmers (older farmers; average age of farmers in Indonesia is 50 years old and older). Farmers who do not want to adopt technology will stagnate in farming activities. The resulting production is not optimal, so the orientation of farming is only to fulfill family food needs. This mindset will impact national food availability. Technology utilization aims to increase efficiency and productivity in agricultural activities (Alwis et al., 2022). The concept focuses on achieving high efficiency in agricultural production. For example, using technology in agriculture, such as a combine harvester or tractor in land cultivation, can optimize farming activities in a shorter time (Rasyid & Ningsih, 2024).

Such expectation is placed to the next generation called the millennial farmers. They include millennials (generations Y and Z of 40 years old and younger or born between 1980s and 1990). They are typically in their prime condition with the potential for a high level of work productivity in addition to high motivation and enthusiasm. With their capability to utilizing technology, they often act as new businesses pioneers (agents of change) in the agricultural sector. This is aligned with the government's expectation in preparing the millennial generation to become competent farmers and achieve sustainable development. Improving the image of the agricultural sector needs to be intensified for the community, especially the younger generation. Promotion of the agricultural sector's potential and opportunities through social media can be done to target the younger generation. The role of the government can also help farmers overcome problems such as marketing agricultural

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products, determining prices, and so on. Market opportunities and bargain prices for agricultural products will make the younger generation interested in working in the agricultural sector.

Although they are in agriculture-related activities, not many millennial farmers are involved in on-farm food crops, especially rice and corn which are perceived as less profitable crops. Rice and corn are often considered less profitable compared to other crops such as vegetables or fruits that have higher selling points or shorter harvest cycles. Farmers, including millennials, tend to choose crops that can provide faster and higher economic returns. In general, millennial farmers are more interested in growing horticultural crops and/or agricultural businesses in a wider term, including animal husbandry with faster cultivation and more promising or profitable results, because the cultivation process is faster, and the results are more promising or profitable (Susilowati, 2016).

By observing this phenomenon, it is interesting that there are millennials who want to become farmers but not as food crop farmers as in agricultural systems in the past or those trying new businesses. One of their recent efforts is to change to more profitable and promising varieties of plant to fulfill the increasingly complex needs of people. These revealed the importance of regenerating millennial farmers to have emerging mindset. On the other hands the technology developt rapidly, which not familiar for old farmer and must be prepare with the disruption of technology.

Coping with opportunities and difficulties in agricultural newest technology, disruption technology, and in regenerating millennial farmers are essential before working on an optimal regeneration strategy. Agripreneurship can be viewed as a form of effort of preparing millennial farmers in the future. Therefore, such preparation of human resources in the agricultural sector is expected to have an impact on increasing work productivity, farmer income and farming businesses sustainability (Limi et al., 2018).

This reality is coherent with research results by Dewi et al., (2010) that simultaneously human resources (education, farming experience, and frequency of counseling/training) lead to significant influence on the success of agricultural development, especially when viewed from the perspective of increasing farmers income. This study tried: (1) to analyze the readiness of millennial farmers to cope with challenges of disruption; and (2) to analyze the regeneration of millennial farmers to establish resilient and sustainable agripreneurship. This research is expected to be useful in providing considerations for policy making related to improving agricultural human resources within the digital era to accomplish sustainable agriculture. This research identified technology-identified millennial farmers in satellite areas, which are areas located close to the city center or larger main sub-districts.

RESEARCH METHODS

This research applied qualitative research method with constructivist approach. According to Patton (2015), constructivism studies various realities constructed by individuals and their implications for their lives and social environment. The research was conducted in Prambanan District, Klaten Regency and Pajangan District, Bantul Regency. These two areas were chosen because they are satellite sub-districts. Prambanan and Pajangan are strategic areas in terms of territory and economy. When agriculture is not the main choice as a livelihood, it would be very interesting to see how far millennial farmers are in farming. Data collection techniques included observation, in-depth interviews and Focus Group Discussions. Research informants consisted of millennial farmers, extension workers and stakeholders (Head of Rural Government, Head of Bantul and Klaten Agriculture Agency). There were 11 informants in this study. The collected data was given

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with triangulated techniques and sources before analyzed through stages of data reduction and categorization as well as to drawing conclusions.

RESULT AND DISCUSSION

Prambanan District, Klaten Regency, Central Java Province is a sub-urban area. Having a direct border with the Special Region of Yogyakarta and being on the main economic route of Solo-Yogyakarta, Prambanan District is considered as a strategic area. Despite tourism supports from Prambanan Temple, Boko Temple, and Sewu Temple, there are also many industries existed in the area such as the t-shirt and net industry. However, the agricultural sector is still an option for the people to make a living. The Prambanan sub-district area covers not only areas around the temple, but also quite far away from several temple relics of Hinduism from the past, such as the villages of Manisrenggo, Bugisan, Kebondalem and many others.

Prambanan District has a lot of potential for agricultural sector development with Kebondalem Lor Village which is its potential for shallot commodities. In 2020, at least 5 hectares was planted with shallots that reached 19.26 tons productivity per hectare, exceeding the average productivity in Central Java (Pemerintah Daerah Kabupaten Klaten, 2020). In 2022, the rice harvest in Bugisan Village reached 325.5 tons of milled dry grain (GKG) with more than 7 tons productivity of GKG per hectare, exceeding the average productivity in the district (Prakoso, 2022). Moreover, based on BPS Kabupaten Klaten (2022) many agricultural commodities were produced in Prambanan District, such as rice, horticulture (onions, chilies, long beans, eggplants), plantations (coconut and tobacco), and livestock (cattle, buffalo, ducks, free-range chickens, broiler chicken, layer chicken, goats, and quail). The variety of agricultural products in Prambanan District proves that the agricultural system is still the main sector for the people of the district.

Kapanewon Pajangan is an area in Bantul Regency with a combination of lowland, limestone hills and massive industries. With such agroecosystem conditions, the agricultural development in the area is not directed towards growing food crops but rather horticulture and animal husbandry sub-sectors, such as goat and sheep farming, fisheries and crossbreeding chickens of native and layer chickens known as "Joper Chickens". In Kapanewon Pajangan, the residents have broader interpretation about agricultural sector, not merely as the agricultural system around farming activities, but also the synergy between plants and animals.

Table 1. Regional Overview

Description	Bantul Regency	Klaten Regency
Population (2023)	1.009.934	1.284.386
Population growth rate	0,59	0,63
Human Development Index	81,09	77,59

Source: BPS Kabupaten Klaten (2019); BPS Kabupaten Bantul (2019)

The population of Klaten Regency in 2023 was larger than that of Bantul Regency (Table 1) and also Klaten Regency indicated faster population growth rate (0.63%) than Bantul Regency (0.59%). Population growth has significant influence on various elements of development such as food supply, employment opportunities, health services and education which are closely related to

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the human development index (HDI). Based on HDI, access to various development results, especially access to income, health and education can be explained.

The growth of population and agricultural condition in both regions need more serious treatment, considering the condition of farmers who are getting older and farmer regeneration is not good as well as the increasingly rapid development of the agricultural world. This problem must be handled immediately and well. One of the main things is the skills and knowledge of agricultural human ressourses.

Strengthening human resources (HR) has a strategic role in overcoming this problem. Development as a process towards better change can be started by preparing competent and resilient human resources. In the development, limited quality of human resources is perceived as a serious challenge. While in the agricultural sector, the low quality of human resources as indicated by low educational level brings impact on the ability to adopt the information and technology. Such impact will influence product quality and also the farmers' income (Muharram, 2021). Therefore, it requires competent human resource management to increase, manage and utilize the development-related resources. Limi et al. (2018) believes that letting low condition of human resources will pose a threat to food availability and potentially lead to conditions of food insecurity. Therefore, improving human resources is an important issue in the agricultural development process, both farmers and extension workers, is an absolute requirement for sustainable agricultural development.

Furthermore, in the current era of globalization, the agricultural sector is must be able to compete with agricultural products from outside, thus it is essential to increasing farmer competency and access to information (Herman S. et al., 2008). The rapid flow of information and connection with the outside world drives the dynamics of market demand with increasing demands of product standards. This reality is in accordance with Gandasari & Musyadar (2017) that the dynamics of market demand requires the response of human resources, especially qualified, competent, capable and business-oriented farmers. The dynamics of market demand are captured as a major opportunity for millennial farmers in Bantul Regency. One of the key informants who is currently pursuing and developing goat/sheep farming stated through in-depth interview:

> *"Here, young farmers association, most of whose members are the millennial generation, are actively involved. The demand for goat in Bantul is significantly high. First, it is because of the satay industry. Second, it is due to high baby birth rate. In 2019, bay births reached 16,000 per year. Assuming that average numbers of 1,300 baby births per month and if only 75% of them from Muslim families and religiously aware, we can see that goat demand is 1,000 per month. It is obvious it cannot be fulfilled merely from goat stocks in Bantul. We have to import the stocks from Medan, West Java, and East Java. This condition makes me think that actually we are not being productive, instead, we are just being consumptive*" (H, Millennial Farmer).

The Use of Social Media: A Means for Forming Agripreneurs

One applicable approach to address physical and non-physical challenges in the agricultural sector is the use of information technology in terms of emphasizing easy access to information, market, and a various kind of innovation. The generations Y (born between 1977 and 1994) and Z (born between 1995 and 2010) are called the millennial generation (Tapscott, 2009) and recognized for their skillful in using technology. Generation Z was born at a time when information technology had developed rapidly and become a fundamental need.

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This is in line with what was stated by the Ministry of Agriculture that traditional agriculture will change into modern agriculture that integrates management and technology to make resources efficient for maximum success. To accomplish it, digital technology applied in agriculture needs the millennial generation with more capability and effectiveness in operationalizing the technology. They who become farmers has two advantages: high willingness to learn, and wider as well as easier networking. They are closely connected to social media, communities and others (Nababan, 2022).

The typical characteristics of innovative millennial farmers with their ability to make good use of technological developments will be a differentiator from senior farmers in terms of mindset. In both research locations, the mindset of millennial farmers in agriculture is not only planting but also taking market signal, benefit cost ratio, sustainability of the product, and business opportunities. From this mind set, it is clear that there are differences older farmer and milenial farmer: (1) Millennial farmers pursuing agriculture are not only food supply oriented. However, agriculture is actually used as a business arena that can produce more promising profits. This is because agriculture is not only about growing crops but also related to improving product quality and marketing agricultural products (Konyep, 2021); (2) Most senior farmer cultivated food or cash crops, while millennial farmer cultivate horticulture, ornamental plants, and some of millennial farmer choose goat/sheep farming which more promising. This fact was revealed by a millennial informant as follows:

> *"Bantul is potential for goat farming with high demand for aqiqah and satay stalls. Here, we don't just raise goats for savings, but also to make goat farming to become a business. Now we have just built a new goat shed with 200 goat capacity. We do the goat farming by following the trends. "For example, to anticipate the need for Eid al-Adha we do livestock fattening, and for normal condition we do livestock breeding* (H, Millennial Farmer)

The start of Covid-19 pandemic in Indonesia was also one of the reasons that encouraged people to start exploring new hobbies or activities with no exposure to other people. The agricultural sector is the common option. The people of Bantul Regency spend a lot of time farming at home. In 2019, 14.79% of population in Bantul Regency aged from 15 years and older worked in the agricultural sector. This figure increased to 16.01% in 2020 (BPS Kabupaten Bantul, 2019).

With lots of time spent at home makes people, especially the millennial generation, look for something to be busy doing in the agricultural sector, especially in the horticulture sub-sector. Horticulture was chosen considering the shorter cultivation period compared to food crops (rice, corn). This is in line with the Ministry of Agriculture's program regarding P2L (Sustainable Food Program) targeting in home yard utilization by planting various plants for daily consumption. Through social media, this program has been transformed into more attractive and with economic value. Many people then followed to imitate and practice the instructions they got from social media, including YouTube, as stated by the research informant stated below:

> *"Young farmers prefer horticulture because it is likely to have more promising results. If you also plant vegetables, for example chilies, there will be extra daily activities when going to rice fields every day. If only you plant rice, you're just sit and wait most of the time, so it's kind of boring"* (Z, Extension worker)

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Apart from the horticulture sub-sector, millennial farmers are also active in the livestock sector. Livestock development is also carried out by utilizing social media to obtain networking for information regarding the community needs for livestock. In addition, social media also beneficial for exchanging information about their business and establish a social network with other millennial farmers. By doing this, the marketing of their agricultural products is not only around Bantul Regency but also reaches outside the regency and even across provinces. In developing this sector, they learn many information related to animal husbandry from YouTube. When faced problems they cannot solve related to livestock farming, they look for consultants who are competent in handling the problems. One of them is a lecturer from the Faculty of Animal Husbandry, Gadjah Mada University, Yogyakarta. Starting with an introduction in a training, millennial farmers then use WhatsApp to consult when they get problems. Even in 2022, they received assistance from the Faculty of Animal Science UGM through a community service program.

The existence of millennial farmers in both Pajangan and Prambanan has given the agricultural sector a broader breakthrough. Millennial farmers in both locations tend to have characteristics that take risks and like challenges. This condition makes millennial farmers in both places tend to cultivate commodities outside food crops, such as chilies, shallots, and so on, in both horticulture. Millennial farmers consider horticultural commodities to be more promising in terms of business than food crops. Regarding sales prices, horticultural commodity products are higher than food crop commodities. Regarding agricultural cultivation, maintenance for horticultural commodities has challenges, such as more intensive care or higher production facilities. Hence, the costs incurred are greater than those of food crop commodities. The existence of daily efforts in farming makes millennial farmers interested in working in the agricultural sector.

The livestock sector is also being cultivated by millennial farmers in Pajangan. The potential market for goats due to the large number of goat satay stalls in Bantul Regency can be detected by millennial farmers. This condition has led millennial farmers in Pajangan to create an organization called Taruna Tani. Taruna Tani contains millennial farmers who are engaged in animal husbandry. With this association, cooperation between millennial farmers can be established. This cooperation can be in the form of sharing information about technical guidance held by the government, buying and selling livestock seeds, producing animal feed, managing livestock waste, and so on. Taruna tani often receives capital assistance from intermediaries through the village government and BPP to develop joint production units. This condition shows that the existence of Taruna Tani has been recognized in the community and government. On the other hand, there is no association for millennial farmers in Prambanan. Millennial farmers still move individually. This condition has caused the position of millennial farmers in Prambanan to be invisible enough.

Some millennial farmers, especially in Klaten Regency, are interested in developing ornamental plants and hydroponics. These two plants have become new fields of business. They began as hobbies, but with the Covid-19 pandemic situation, this business showed promising high profit. Millennials turned their yards, which were originally planted with garden plants, into beautiful ornamental plants. They carried out synergically effort by working together in making manure from livestock waste, planting grass plants for livestock feed in their fields and the using resulted artificial fertilizer as fertilizer for the ornamental plants. This was when the attitudes and motivation of the millennial generation to become agropreneurship actually emerge.

The social changes resulted from the pandemic were apparently accompanied by the emergence of social engineering, especially in the agricultural sector. In supporting this business,

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various training courses are provided or offered via social media, which are easily accessed and followed by the millennial generation. These include technical guidance, webinars, sharing sessions, as well as various easily accessible activities to anyone who is interested. In such conditions and with gadget on hands, millennials can freely take part in and/or choose various training that suits their needs. The following interview results support the above analysis:

> *"During Covid, I took part in webinars. I collected the certiaficates, coincidentally the certificates were useful for applying for P4S. Thank God I passed the test and now I am certified P4S holder"* (H, Millennial Farmer)

P4S is Center of Agricultural and Independent Rural Training. P4S is located in a village which is established, owned and managed by the main business actors independently either individually or in groups. What H did was in accordance with Minister of Agriculture Regulation 33 of 2016 where the objectives of P4S include (1) increasing knowledge and skills, (2) disseminating and conveying agribusiness-based technology information, (3) guiding the application of technology, (4) developing learning methods through the pilot method (demonstration), (5) assisting the agriculture extension worker and (6) fostering a spirit of leadership and facilitating the fulfillment of farmers' needs.

As for senior breeder generation, livestock is viewed as savings and salable any time when needed. This is different from the millennial generation who actually see it as a promising business opportunity as long as they can understand the needs of their consumers, as stated by the millennial generation involved in livestock sector:

> *"Here, we don't just raise goats for savings, instead we do it for a business. Now we have just built a new goat shed with 200 goat capacity. We raise livestock and follow trends. For example, for anticipating market in Eid al-Adha we do livestock fattening, and in normal condition we do livestock breeding"* (H, Millennial Farmer)

Social Transformation of Millennial Farmers: Between Expectations and Reality

It is commonly known that most of current agricultural management is carried out by small farmers (in terms of business scale and subsistence farming) either with small or large land areas, indicating inefficiency with production process that is in comply to rules of quality process. This condition leads to decreasing income for farmers, which requires special attention from all related parties. The presence of millennial farmers having concept of entrepreneurship (agripreneur) can be the solution to social problems, especially the poverty of small farmers (Suryanto, 2022).

The agricultural sector is one of the sectors with continuing revolution, but also involution. From the beginning, the agricultural system was carried out only using human power in processing, planting and harvesting as well as post-harvest. The development on the use of appropriate technology and developments which now require digital technology have changed the face of agriculture from traditional into modern and finally to postmodern. In this postmodern era, the use of digitalization shows more of its nuance in the agricultural systems. Coherently, the globalization era that happens in many countries, including Indonesia, has shifted the agricultural sector towards industrial sector. If this continues, it may pose a threat to the existence of national as well as the world food supplies. This is as indicated by alteration of large amount of agricultural land into other functions, in addition to the decreasing number of workers in the agricultural sector and shifting to the industrial and service

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sectors. In Clifford Geertz's view, this phenomenon is called agricultural involution where the agricultural sector experiences stagnation or is unable to increase income, and even experiences a decline (Muhtalim, 2020).

Social transformation has occurred in welcoming the digital agricultural system for some agricultural human resources, especially millennial farmers and some extension workers who are innovative and have used technology to help farmers find solutions for crucial problems they face. Millennial farmers use ICT developments to enhance their businesses and to network with other farmers, customers and stakeholders. From this picture, it is clear the transformation that the introduction of digitalization into the agricultural sector is expected, have the followings:

1. Ability to accelerate the development of the agricultural sector
   The development of digitalization brings a new breath to the agricultural sector. The speed of agricultural development is accelerating. Bacco et al. (2019) stated that in the future, technology will play an increasingly important role in agriculture. This is reflected in the increasingly diverse and easy ways of producing, distributing, presenting and accessing agricultural information by all parties of both farmers and extension workers. One of them is information on commodity prices to prevent middlemen to manipulate. In an in-depth interview, H as informant stated:

   > *"I can provide information to farmers about government policies, about commodity prices. Whenever there is a chili auction, I can inform you. I go to one in Sleman and one in Panjatan, I know all the links, therefore I can inform them the price every night" (*H, Extension Worker*)*

2. Increasing digital technology in the agricultural sector to have farmers with motivations for their farming business (Rijswijk et al., 2019)
   This is important because it enables them to have easier connection with markets and financial services (capital) which has been a problem previously. This causes changes in the development and delivery of information carried out by agricultural information providers (Nambisan et al., 2017). Digitalization creates extremely rapid developments in technology and information. It is also an illustration of the socio-engineering process surrounding digital use which has an impact on the social institutional context (Tilson et al., 2010).

   > "*We use social media to look for information on livestock development. We also have a coordination group on WhatsApp. The same goes for livestock advertisements*" (Y, Millennial Farmer)

   It is also resulted that self-efficacy made H highly involved in the agricultural sector and left his previous job in photocopy services:

   > *"Initially I started with goats and sheep. Because I did not have much money, a goat was lent to me by a friend from a preaching workshop. I also found myself foraging for grass and so on. In the end, herding goats was not as easy as I imagined. Then, 11 of the 20 of my goats died. That was the moment when I began to think that the first thing before starting anything is to have the strong intention, not just economic motives. So, I learn. Finally, I tried to learn more. I was recommended by a friend: this is it; it suits you well"* (H, Millennial Farmer)

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3. Innovation that is built together involving multiple actors and partnerships.
   The ultimate goal of innovation is no longer increasing production, instead it is in the form of a value chain that social networks become an important actor. Therefore, institutional changes occur as characterized by changes of roles of various lines in the agricultural sector (Sirnawati, 2020).

> "*In Prambanan, there is a communal cattle pen operated by farmers. it has very systematic treatment, starting with weighing the cows and fed together. After 3-4 months, the cattle the sold to existing networks*." (W, Extension Worker)

Communal rearing of cattle is one form of value chain in which cattle are kept (fattened) for a certain period of time and then sold to an existing network (partners). The process of communal rearing certainly requires support from social networks of livestock groups. Livestock which was originally reared individually in cages of each house has shifted into communal rearing and taken cared of together.

> *"Most of the seniors choose to rise cows, while the youngers choose goats and also ducks and quail. Cows require larger capital and usually done by senior farmers. With Rp 20 million of capital, you can have 10 goats to rise. Cows are more likely seen as savings, while with goats, you can earn monthly income or sell them"* (Y, Senior Farmer)

Meanwhile, there are many challenges and obstacles found daily reality, including:

1. The challenge of negative perception label given to families working in the agricultural sector.
   Parents (senior farmers) in the research area hope their children not to become farmers like themselves, because the image of farmers being dirty with low social status, low income, and labeled as not prestigious job. They would rather have their children to works as civil servant or factory worker with clear career and income. This kind of perception often discouraged millennial generation from pursuing work in the agricultural sector. The perception ultimately becomes a stigma, because it is conveyed repeatedly and eventually becomes a local cultural value system. This is always confirmed by a statement of one of informants in the FGD:

> *"So, since I was little, my parents often suggested me not to become a farmer. They hoped I could be employee or factory workers because my father thought being a farmer is difficult. When parents have given their children such doctrine, it is more likely to be difficult to regeneration of farmer. Such belief is actually a fatal mistake because since childhood, the family has been directed not to become farmers"* (H, Extension Worker)

   This stigma can end only there is real evidence. This stigma can be stopped only by the children of millennial generation themselves by proving to become farmers engaged in the business of harvesting horticulture. Then, evidence shows that horticultural farmers can achieve a lot of success, which makes parents and the social environment recognize the greatness of being a farmer.
2. Negative stigma regarding the farmer as a profession
   The negative stigma which is believed in a system of cultural values was passed down from generations regarding farmer as a profession applies on both research areas. This condition is a challenge for developing human resources as farmers in the current era where utilization of digital

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technology is a must. Susilowati (2016) stated that negative stigma of the profession as a less prosperous is firmly embedded in the hearts of millennial generation. Therefore, it is challenging and uneasy for millennial generation to choose to become farmers.

3. Government support only for the upstream sector
   So far, government support has only been given for the upstream sector and lead to agricultural becoming vulnerable. So far, the price of food commodity has been controlled by the farmer selling price (HPP) mechanism that makes food farmers rarely enjoy large profits. On the other hand, the prices of horticultural commodities such as chilies, shallots, cucumbers and tomatoes often fall during the main harvest. To cope with this problem, anticipation is necessary to prevent new farmers from deterred in pursuing their farming business.
4. Favors for development of business diversification
   Additional accompanying funds for millennial farmers striving to farm outside the standard of management should be given special attention. The farming businesses developed by senior farmers are mostly food crops which require a longer time which is far from promising profits. Millennial farmers present other businesses with quicker harvesting and more profits. It can be exemplified here that the choice of horticultural crops taken by millennial farmers because harvesting is more frequent, quicker and can be better calculated. Another example, choosing goats instead of cattle is because goats are more saleable compared to cattle which take longer time to become marketable.

CONCLUSION AND SUGGESTION

The spread of the technological revolution has put society in an era of disruption that hit various sectors, including the agricultural sector. This sector is still essential as being the basis of hopes for national food sufficiency in Indonesia. The happening of agricultural digitalization can be captured by the millennial generation as a new hope for improving the welfare of farmers, especially millennial farmers. Gap of utilization of in the use of technology in this sector is caused by the majority (almost 80%) of agricultural sector workers are over 50 years old and generally illiterate in technologies. Different case occurs for young farmers from millennial generations. They have ability and willingness to utilize digital technology to change the image and stigma of the agricultural sector being dirty with prolong duration and not promising results, as well as being not prestigious in the society's point of view. It turns out that the millennial generation are able to prove its ability and resilience by commodifying food crops to horticultural crops, as well as expanding and developing livestock and ornamental plant sectors into commodities favored by consumers, especially during the Covid-19 pandemic and even up to now.

By using social media to network with other farmers, consumers, and related stakeholders, millennial farmers can achieve good success in their profession. In other words, a social transformation has been emerged that working as millennials farmers nowadays has actually become a hope for those who cannot enter other sectors. Moreover, millennial farmers can fight the negative stigma regarding the profession, despite that our country is still an agricultural country that can provide food sufficiently at national or at least regional level.

The existence of millennial farmers who are starting to develop and exist needs to get support from various parties, including the government, academics, and the private sector. Various support programs for millennial farmers are expected to always exist in order to produce reliable and adaptive

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farmer successors in facing the disruption era. With that it is hoped that sustainable development of the agricultural sector can proceed as expected such as by reducing the gap between expectations and the reality faced by millennial farmers today.

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