

# **EMPOWERMENT OF MILLENNIAL FARMERS IN INCREASING FARMERS WELFARE IN THE INDUSTRIAL 4.0 ERA AND TOWARDS THE SOCIETY 5.0 ERA**

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**Abstract.** Indonesia as an agricultural country seems to be disappearing soon, but this situation is supported by the decline in the number of young farmers due to the subsequent activation of farmers. This research aims to improve welfare and create digital technology innovations in the role of young entrepreneurs in the millennial agricultural community. The method used is a literature review study method with a qualitative approach. The literature review method was chosen because it can be seen from the location of data collection. Based on the research results, revolution means very fast change. This revolution began with the Industrial Revolution 1.0 which was marked by the creation of the steam engine. This means the emergence of tools that change the power of humans and animals. Finally, Industry 4.0 has arrived. It is characterized by intelligent engineering, human-machine connectivity, and the Internet as the foundation of progress. Some call the Industrial Era 4.0 an era of turmoil.

**Keywords:** millennial; increasing; digital technology innovations.

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## INTRODUCTION

Indonesia as an agricultural country looks like it will soon be lost, this situation is supported by the reduction of young farmers as the next farmer regeneration. Indonesia, which is known as a fertile country, is expected to experience a condition where Indonesia will experience a crisis in the next ten to fifteen years. In fact, for the past three years, farmers in Indonesia have begun to decrease, this is due to the community's stigma that the agricultural profession is less promising, thus making young people reluctant to become farmers, which is then decreasing year after year. The majority of farmers in Indonesia have narrower land tenure even less than one hectare, besides that there are still many factors that make it difficult for them to prosper so that it is difficult for small farmers to develop and need other breakthroughs to overcome this problem. Farmer transformation is urgently needed. Households in which at least one family has one person working in the agricultural sector are called Farmer Households (RTP). Based on the results of the 2018 census, it was stated that around 27 million people are small farmers who own about 0.5 hectares of land, especially on the island of Java, which is around 0.3 hectares. Although land ownership is small, the role of farmers is very important in meeting food needs. These farmers are instrumental in meeting the national food needs. Even though the farmers are loyal in farming on the grounds that they are forced to meet their daily needs. Thus, farmers must pay attention to get a reasonable income to achieve a better life. Farmers to obtain

sufficient yields must have at least one hectare of land, and even then only earn an average income. Several factors make it difficult for farmers to prosper, including markets that are difficult to penetrate directly by farmers so that farmers can only plant but cannot sell, difficulty in getting capital to run a business, *supply change* and constraints in human resources. To improve welfare, the role of the younger generation is urgently needed for the millennial farmer community with an *entrepreneurial spirit*, making digital technology innovations.

## METHODS

This research uses a literature review research method with a qualitative approach. This can be seen from the location of the data collection so that the literature review method was chosen ([Harahap, 2017](#)). This literature review is a data collection technique by conducting literature studies, reviewing books, notes, and reports that have a relationship with the study being studied. Although in a study, of course, it cannot be separated from library research, be it field research or literature review. However, the most basic difference is in research with a literature review method, journals, books, reports, and the like are used in the main data collection ([Yahya, 2015](#)). Then the qualitative approach is defined as an approach that focuses on a deeper understanding of a research problem formulation ([Husni, 2016](#)). This research using a qualitative approach is expected to provide comprehensive facts regarding the empowerment of millennial farmers in improving the welfare of farmers in the

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industrial 4.0 era and towards society 5.0 ([Klimova & Pikhart](#), 2019).

The data collection technique was carried out by exploring journals and other information relevant to the study. The journals used are searched on *Google Scholar* and several other journal provider websites using a writing format, some of which are millennial farmers, farmer welfare, farmers in the industrial era, and so on. After exploring journals, books, and other information, an analysis is carried out which is then used in making reports or journals using the literature review research method ([Chu](#), 2015).

## RESULTS AND DISCUSSION

### The era of society 5.0

Revolution means a very fast change. This revolution began with the industrial revolution 1.0 which was marked by the creation of the steam engine, meaning the emergence of tools that convert human and animal power. After that, came the 2.0 revolution marked by the emergence of electricity use. Then the 3.0 revolution was marked by the use of computerization. Finally, it came to Industry 4.0 which was marked by intelligent engineering, human and machine connectivity, and the internet as the foundation of progress ([Sasikirana & Herlambang](#), 2020).

Currently, the term industry 4.0 is no longer foreign to the ears of the Indonesian people. There are also those who call the industrial era 4.0 the era of disruption ([Sabri](#), 2019). In this era, all circles, both society and government, are competing in the use of technology and information systems in various aspects of life ([Setiawan](#)

[& Lenawati](#), 2020). In the industrial era 4.0, it is no longer difficult to use and access information technology. This information technology continues to be transformed by becoming increasingly sophisticated, so that its sophistication can provide convenience for all levels of society in this era of globalization ([Mumtaha & Khoiri](#), 2019).

The development of globalization which is marked by the development of technology, information, and communication causes changes in digital technology which also changes the industrial order. The more advanced and developing various human-designed technologies that bring significant changes to human life itself. This technological change is expected to be a solution to social problems, as well as to replace the physical work done by humans. Starting from that, Japan developed a core concept of the *5th Science and Technology Basic Plan* called Society 5.0 after the industrial era 4.0 ([Sugiono](#), 2020).

Industry 4.0 has become a significant change for human life in various aspects. Industry 4.0 does not develop alone but by humans who continue to process. That way, industry 4.0 and humans have a reciprocal relationship that must be maintained. Then comes a new concept that has developed so that it can take advantage of existing information technology to improve welfare. This is what is called society 5.0. Society 5.0 is a concept that places humans as the center of innovation, in contrast to industry 4.0 which focuses on the production process only ([Usmaedi](#), 2021). Society 5.0 does not only focus on manufacturing factors but on solving social problems by

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integrating physical and non-physical spaces ([Nastiti & Ni'mal'Abdu, 2020](#)).

### **Welfare of farmers in the industrial era**

Low labor productivity is one of the main problems of human resources (HR) in the agricultural sector. The low productivity in the agricultural sector indicates that the resulting production is not commensurate with the workforce. In the agricultural sector, the majority of them are old farmers with low education. Regeneration of farmers is an unresolved matter, caused by the interest of the younger generation in working in the agricultural sector ([Yofa & Syahyuti, 2020](#)).

The millennial generation is growing along with the development of information and communication technology. Millennials use technology in all aspects of life. The development of information technology is expected to be able to participate as a solution in improving people's welfare. However, with the millennial generation's lack of interest in the agricultural sector, the welfare of the community is silent and even continues to decline.

### **Millennial farmers**

One sector that has an important role in Indonesia is the agricultural sector. In the agricultural sector in Indonesia, there are approximately one hundred million people who work so they should be able to spur themselves to increase agricultural production. Agriculture is one of the important sectors, this must be accompanied by technological developments as well. However, the use of technology in the agricultural sector has

not been used optimally. Coupled with the decline in production results due to weather and seed quality, even though providing sufficient food for the community is the task of the agricultural sector. In the era of the development of information and communication technology which has developed quite rapidly but there are still few people who can use it properly due to a lack of minimal knowledge. So it has not been maximized in its use, especially in the agricultural sector. The traditional method is a method that is still widely used by farmers, but of course there is also the possibility of farmers starting to enter the realm of millennial farmers ([Yofa & Syahyuti, 2020](#)).

The Ministry of Agriculture initiated millennial farmers which is expected to be one of the solutions in overcoming the slow regeneration of farmers. This millennial farmer is considered to be a liaison between young farmers and old farmers. However, agriculture is synonymous with poverty which causes the younger generation to be reluctant to work in the agricultural sector ([Haryanto et al., 2022](#)); ([Inwood et al., 2013](#)) revealed that the majority of today's young generation who are children of farmers do not want to continue their business in agriculture like their parents. There are two factors in the decline of the millennial generation in the agricultural sector, namely internal factors and internal factors. Internal or internal factors, the millennial generation assumes that the profession in agriculture is not a prestigious profession so they like work outside the agricultural sector. Then the external factor is the fragmentation of agricultural land due to the inheritance

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system. Thus, when a land is inherited, it is sold and converted by the new owner to non-agricultural uses (Francis et al., 2012). Another reason is the perspective, the perspective of the younger generation has begun to change along with the development of the era as it is today. The younger generation in rural areas, jobs in agriculture are getting less and less interested. The crisis of young farmers has an impact on the sustainability of the agricultural sector, more specifically on agricultural products, market competitiveness, the economy in rural areas, thus threatening national security and the sustainability of the agricultural sector (Ayu & Naully, 2020).

### **The Role of Millennial Farmers in Improving Welfare The**

Regeneration of the main players in the agricultural sector is running very slowly, so that serious treatment is needed, the cause is none other than the faster industrial development. The regeneration of farmers is reflected in the interest of the younger generation in the agricultural sector. However, all countries in the world who want to stay in the agricultural sector need to prepare early on for sustainable regeneration that loves agriculture because almost all food around the world is the result of cultivated land and livestock grazing (Fischer et al., 2010). For this reason, the lack of regeneration in the agricultural sector is a food crisis caused by an imbalance between food availability and population. Scarcity of food which has an impact on rising food prices on the market (Konyep, 2021).

Many workers from the agricultural

sector need to be protected and promoted. However, in reality there are still many workers who work in this agricultural sector experiencing poverty (Konyep, 2021). Poverty is closely related to welfare, if a community is poor then it is not prosperous. Welfare is reflected in the fulfillment of basic needs and increased purchasing power (Yacoub & Mutiaradina, 2020). Thus, the presence of millennial farmers is expected to bring changes to the welfare of the community.

### **CONCLUSIONS**

The lack of interest of the younger generation in the agricultural sector has become a serious problem and requires more attention because the agricultural sector has a significant influence on the economy in Indonesia. In this way, the presence of millennial farmers becomes a new hope for the Indonesian economy. The economic sector is closely related to welfare, so that millennial farmers are expected to further improve the welfare of all Indonesian people in the industrial era 4.0 and towards the era of society 5.0.

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