

The impact of population aging on agricultural development in Vietnam

Nong Thu Huong

Head of Population Department - Thai Nguyen City Medical Center

Abstract

Population aging is becoming a significant issue in Vietnam, with widespread effects across various sectors, including agriculture. This study aims to assess the impact of population aging on the agricultural labor force, agricultural productivity, labor quality, and production costs. The results indicate that population aging not only reduces the number of young workers but also poses numerous challenges to the sustainable development of the agricultural sector. The paper proposes several measures and policies to mitigate negative impacts and maximize the utilization of the existing labor force.

Keywords: Population, aging, agriculture, sustainability, Vietnam.

Date of Submission: 04-08-2024

Date of acceptance: 15-08-2024

I. Introduction

Population aging is a global demographic phenomenon reflecting changes in the age structure of a population. This phenomenon began to emerge prominently in the latter half of the 20th century and is becoming increasingly common in many countries worldwide, including Vietnam. Population aging occurs when the proportion of elderly people in the total population rises, while birth rates decline and average life expectancy increases. In Vietnam, the process of population aging is unfolding rapidly, presenting numerous challenges and opportunities for the country's socio-economic development, particularly in the agricultural sector.

Agriculture is the backbone of Vietnam's economy, playing a crucial role in food supply, employment, and income generation for a large segment of the population, especially in rural areas. According to statistics, by 2020, approximately 65% of Vietnam's population lived in rural areas, and agriculture accounted for about 15% of the country's GDP. Therefore, any changes in the population structure can have profound effects on the sustainable development of the agricultural sector.

Vietnam is undergoing a demographic transition with an increasing proportion of elderly people (over 60 years old). It is projected that by 2030, this proportion could reach 17%, placing Vietnam among the countries with an aging population. The rise in the proportion of elderly people is the result of improvements in healthcare, nutrition, and living conditions, leading to an increase in the average life expectancy of the Vietnamese people. However, this also presents significant challenges for society and the economy, particularly in maintaining the labor force and labor productivity.

Decline in the young labor force

Population aging leads to a decline in the young labor force, thereby increasing the dependency ratio. In rural areas, where agriculture is the primary source of income, the shortage of young workers can result in a severe labor deficit. The young labor force is typically healthy, dynamic, and adaptable to new technologies in agricultural production. The reduction of this group may decrease agricultural productivity and efficiency while placing a heavier burden on older workers.

Impact on labor productivity and quality

Older workers generally have lower labor productivity and less adaptability to new technologies compared to younger workers. This affects labor quality and the efficiency of agricultural production. Moreover, the shortage of young workers may lead to a lack of skills and experience in applying modern agricultural methods, which could reduce the competitiveness of Vietnam's agricultural sector in the international market.

Increase in agricultural production costs

With the increasing number of older workers in the labor force, agricultural production costs tend to rise due to the need for healthcare and social welfare. Simultaneously, the shortage of young workers may necessitate

hiring external labor at higher costs. This could reduce the profitability of farming households and agricultural enterprises, thereby affecting the sustainable development of the sector.

This study aims to analyze the impact of population aging on the development of Vietnam's agriculture and to propose policy recommendations and measures to effectively address this phenomenon. Specifically, the study will focus on the following aspects:

- Analyzing the trends in population aging and the contributing factors to this phenomenon in Vietnam.
- Assessing the impact of population aging on the agricultural labor force, agricultural productivity, labor quality, and production costs.
- Comparing with countries experiencing similar population aging in the agricultural sector to draw lessons learned.
- Proposing measures and policies to mitigate the negative impacts of population aging on agriculture and promote the sustainable development of the sector.

Population aging is becoming a significant challenge for the socio-economic development of Vietnam, particularly in the agricultural sector. This study will provide a comprehensive overview of the impact of this phenomenon on agriculture and propose measures and policies to minimize negative effects while maximizing the potential of the existing labor force to promote sustainable development in the sector.

II. Trends in population aging in Vietnam

Population aging in Vietnam is occurring at a rapid pace, as evidenced by statistical data. According to the General Statistics Office, the proportion of elderly people (aged 60 and above) in the total population increased from 7.1% in 2009 to 11.9% in 2019. The trend of population aging continues to accelerate, accompanied by a high rate of urbanization and a declining birth rate, which reached its lowest point between 2018-2023. In 2023, Vietnam's average population reached 100.3 million people, with a fairly balanced gender ratio (49.9% male and 50.1% female). The urban population averaged 38.2 million people, accounting for 38.1%, while the rural population was 62.1 million people, making up 61.9%. Vietnam is the third most populous country in Southeast Asia (after Indonesia and the Philippines) and ranks 15th in the world. Due to a slight decline in birth rates, population growth has slowed in recent years and is projected to continue decreasing (with an average annual growth rate of 0.98% in 2022 and 0.84% in 2023).

Vietnam's population structure is shifting towards an increasing proportion of elderly people and a decreasing proportion of young people. Vietnam is currently experiencing a period of demographic dividend while also undergoing population aging. The proportion of the young population aged 0-14 decreased from 24.3% in 2019 to approximately 23.9% in 2023, while the elderly population aged 60 and above rapidly increased from 11.9% in 2019 to 13.9% in 2023. The working-age population (15-59 years) accounted for 63.8% in 2019 but declined to 62.2% in 2023.

The primary causes of this phenomenon include declining birth rates and increasing life expectancy. Specifically, the average life expectancy of Vietnamese people has risen from 68 years in 1990 to 76 years in 2020.

Impact on the agricultural labor force
Population aging has profound effects on the agricultural labor force. The decline in young labor is one of the most notable consequences. Young workers play a crucial role in maintaining productivity and innovation in agricultural production. They are typically quick to adopt new technologies and implement modern farming practices. However, with the increasing proportion of elderly people, the young labor force is gradually diminishing, leading to severe labor shortages in many rural areas.

In the fourth quarter of 2023, the number of workers in the industrial and construction sectors reached 17.2 million, an increase of 92,000 compared to the previous quarter. Labor in this sector continued to grow at a higher rate than in the previous quarter (0.5% compared to 0.1%). The service sector employed 20.5 million people, an increase of 58,600 (0.3%), while the agricultural, forestry, and fishery sectors had 13.8 million workers, a decrease of 20,100 (0.1%). Overall in 2023, the agricultural, forestry, and fishery sectors employed 13.8 million people, a decrease of 118,900, or 0.9% compared to the previous year; the industrial and construction sectors employed 17.2 million people, an increase of 248,200 (1.5%); and the service sector employed 20.3 million people, an increase of 553,600 (2.8%), maintaining the highest growth rate among the three sectors.

Survey results from rural areas indicate that a significant proportion of workers aged 20-40 have migrated from rural to urban areas or abroad in search of better job opportunities. This shift leaves a labor burden on the elderly who remain in rural areas. The labor productivity of elderly workers is typically lower due to declining health and reduced adaptability to new technologies. Furthermore, the shortage of young workers leads to a lack of skills and experience in applying advanced agricultural methods, negatively impacting agricultural productivity and product quality.

Impact on agricultural labor productivity and quality

Elderly workers typically have lower labor productivity and are less adaptable to new technologies compared to younger workers. This not only affects labor quality but also the efficiency of agricultural production. According to a study by the Vietnam Academy of Agricultural Sciences, the labor productivity of elderly workers in the agricultural sector is only about 70% of that of younger workers. Moreover, the adoption of new technologies and modern farming methods requires high levels of knowledge and technical skills, which elderly workers often lack due to limited training opportunities and outdated knowledge.

Additionally, the shortage of young labor can lead to a lack of skills and experience in managing and operating modern farms. Large farms and agricultural cooperatives often require professional management and high technical skills to achieve maximum efficiency. However, with an aging workforce, finding individuals capable of taking on management and technical roles has become increasingly difficult.

Increasing agricultural production costs

Population aging also drives up agricultural production costs. With the growing number of elderly workers, the demand for healthcare and social welfare rises, pushing production costs higher. According to a study by the Institute of Public Policy and Rural Development, healthcare costs for elderly workers in the agricultural sector have increased by 20% over the past decade.

Moreover, the shortage of young labor has led to the need to hire external workers at higher costs. Many farmers have had to hire seasonal workers from other regions or even from abroad to compensate for labor shortages during harvest seasons. This not only increases production costs but also affects the profitability of both farmers and agricultural enterprises.

Impact on innovation and sustainable development in agriculture

The shortage of young labor and the increase in elderly workers also affect the ability to innovate and promote sustainable development in agriculture. Technological innovation and the adoption of modern farming methods are crucial for enhancing productivity and ensuring sustainable development. However, with an aging workforce, the ability to absorb and apply new technologies is limited.

According to a report by the Food and Agriculture Organization of the United Nations (FAO), the rate of adoption of modern agricultural technologies in countries with aging populations is generally lower than in countries with a younger workforce. In Vietnam, many farmers still use traditional farming methods due to a lack of knowledge and skills in new technologies. This not only affects productivity but also reduces the competitiveness of Vietnamese agricultural products in the international market.

Research findings indicate that population aging poses significant challenges to the development of Vietnam's agricultural sector. The decline in young labor, low productivity of elderly workers, and rising production costs are issues that need to be addressed. However, alongside these challenges, population aging also presents opportunities if managed well. Elderly individuals, with their experience and skills, can contribute to mentoring and training young workers and participate in high-value agricultural production and business activities.

Measures and policies such as improving healthcare, providing skills training for the elderly, and encouraging their participation in the agricultural workforce can help mitigate negative impacts and promote the sustainable development of the sector. Investment in technology and innovation is also a critical factor in enhancing productivity and agricultural production efficiency in the context of population aging.

Assessing the negative and positive impacts of population aging on agricultural development

Population aging in Vietnam, particularly in Thai Nguyen province, presents numerous challenges for the agricultural sector. The most evident negative impact is the decline in the young labor force, who typically take on physically demanding jobs and are more adept at adopting new technologies. According to data from the Thai Nguyen Statistical Office, the proportion of the working-age population (15-64) decreased from 71.2% in 2010 to 65.8% in 2020, while the proportion of elderly people (over 60) increased from 8.3% to 12.5% over the same period.

The shortage of young labor not only reduces productivity but also hinders the ability to implement modern farming techniques, leading to lower production efficiency. According to a report by the Thai Nguyen Department of Agriculture and Rural Development, rice yields in 2020 reached only 5.5 tons/ha, below the national average of 5.9 tons/ha. This lower productivity is partly due to the lack of young labor capable of applying new and modern farming methods.

However, population aging can also bring about positive effects if managed correctly. Elderly individuals possess experience and traditional agricultural knowledge, which can play a crucial role in mentoring and training younger workers. Moreover, adopting technologies and production methods suited to the capabilities of the

elderly, such as using lighter machinery and smart technology, can help increase productivity and production efficiency.

Comparison with other countries

Comparisons with other countries experiencing similar population aging phenomena, such as Japan and South Korea, indicate that investing in technology and labor training is key to mitigating the negative impacts of an aging population. In Japan, the development of automated agricultural technologies and robotics has helped offset labor shortages while enhancing productivity and product quality. Meanwhile, South Korea has implemented training programs for the elderly, enabling them to continue working in agriculture and contribute to the economy.

Measures and policies implemented and their effectiveness in Thai Nguyen

In Thai Nguyen, local authorities have recognized the importance of supporting the elderly in agriculture. Several measures have been implemented, including skills training programs for the elderly and encouraging their participation in agricultural cooperatives. According to a report from the Thai Nguyen Department of Labor, Invalids, and Social Affairs, over 2,000 elderly people participated in agricultural technology and farm management training courses between 2015 and 2020.

Additionally, Thai Nguyen has invested in high-tech agricultural projects to reduce reliance on manual labor and increase productivity. For instance, the "Smart Farm" project in Phu Binh district has applied automation and IoT (Internet of Things) technologies to manage and monitor the production process, resulting in a 20% increase in productivity compared to traditional methods.

However, many challenges remain. Access to and adoption of new technologies are still limited for many farmers, especially the elderly. Local authorities need to continue strengthening training and technical support programs while encouraging the participation of businesses and organizations in developing and transferring agricultural technology.

Population aging poses significant challenges to agricultural development in Thai Nguyen and Vietnam as a whole. However, by implementing appropriate measures and policies and leveraging the experience and knowledge of the elderly, it is possible to mitigate the negative impacts and promote the sustainable development of the sector. Investment in technology and labor training is crucial for improving agricultural productivity and product quality in the context of population aging.

III. Conclusion

Population aging in Vietnam, particularly in Thai Nguyen province, presents numerous challenges for the agricultural sector. The decline in the young labor force and the low productivity of elderly workers are issues that need to be addressed. However, population aging also offers opportunities to capitalize on the experience and knowledge of the elderly. By investing in technology, labor training, and implementing supportive policies, it is possible to mitigate the negative impacts and promote the sustainable development of the agricultural sector. Learning from other countries and applying appropriate measures will help improve agricultural productivity and product quality in the context of an aging population.

References

- [1]. General Statistics Office of Vietnam. "Press Release on the Population, Labor, and Employment Situation in Q4 and the Year 2023." Accessed December 2023. <https://www.gso.gov.vn/du-lieu-va-so-lieu-thong-ke/2023/12/thong-cao-bao-chi-ve-tinh-hinh-dan-so-lao-dong-viec-lam-quy-iv-va-nam-2023/>
- [2]. Preliminary Results of the 2023 Population Change and Family Planning Survey as of April 1, 2023.
- [3]. Zhong-yi, S. U. N., Li, W. A. N. G., & Xing-feng, L. I. (2022). Population aging, socialized agricultural services and agricultural high quality development. *Journal of Guizhou University of Finance and Economics*, 40(03), 37.
- [4]. Zhang, Y., Dong, Q., & Ma, G. (2023). Effects of rural population aging on agricultural carbon emissions in China. *Sustainability*, 15(8), 6812.
- [5]. Guo, G., Wen, Q., & Zhu, J. (2015). The impact of aging agricultural labor population on farmland output: from the perspective of farmer preferences. *Mathematical problems in Engineering*, 2015(1), 730618.
- [6]. Liu, X., Xu, Y., Engel, B. A., Sun, S., Zhao, X., Wu, P., & Wang, Y. (2021). The impact of urbanization and aging on food security in developing countries: The view from Northwest China. *Journal of Cleaner Production*, 292, 126067.
- [7]. Lee, C. C., Yan, J., & Wang, F. (2024). Impact of population aging on food security in the context of artificial intelligence: Evidence from China. *Technological Forecasting and Social Change*, 199, 123062.
- [8]. Shen, D., Liang, H., & Shi, W. (2023). Rural population aging, capital deepening, and agricultural labor productivity. *Sustainability*, 15(10), 8331.
- [9]. Seok, J. H., Moon, H., Kim, G., & Reed, M. R. (2018). Is aging the important factor for sustainable agricultural development in Korea? Evidence from the relationship between aging and farm technical efficiency. *Sustainability*, 10(7), 2137.
- [10]. Liao, L., Long, H., Gao, X., & Ma, E. (2019). Effects of land use transitions and rural aging on agricultural production in China's farming area: A perspective from changing labor employing quantity in the planting industry. *Land Use Policy*, 88, 104152.