Developing Human Resources in the Agricultural Sector: The Case Vietnam

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Abstract
The development of Vietnam's agricultural sector is still unsustainable, with a low growth rate, production and business organizations still rely mainly on small farmers, lacking linkages; Research, application of science and technology, innovation, and human resource training are still limited and have not become the main driving force to create development breakthroughs. One of the reasons is due to limited human resources in the agricultural sector. Therefore, this study was conducted to clarify the concept of human resource development in the agricultural sector; Assess the current status of human resource development in the agricultural sector in Vietnam; Propose some solutions to develop human resources in Vietnam's agricultural sector.

Keywords: Human Resources, Human Resource Development, Agricultural Industry

1. Introduction
Vietnam is a developing country, in which agricultural labor still accounts for a high proportion, but the value created by the agricultural sector is much lower than other economic sectors. The agricultural sector's labor force aged 15 and older accounts for 27.5%, but only creates 11.88% of the value of total domestic product (General Statistics Office, 2023) [12, 13]. Human resources in Vietnam's agricultural sector are large in number, have low levels of education and technical expertise, and lack an industrial working style. As a result, low-skilled workers and young people in rural areas find it difficult to transition into the expanding private sector. They are often left behind in agriculture or the informal economy. (Worldbank, 2014) [15]. In 2022, the proportion of workers aged 15 and older working in the agricultural sector who have received training will only account for 4.1%, much lower than the total number of workers aged 15 and older working. Jobs in the trained economy for the whole country is 26.3% (General Statistics Office, 2023) [12, 13]. Meanwhile, agricultural production in the world today applies scientific and technical advances to production, using mental labor instead of manual labor, creating productivity, quality, and product value. very high, especially in mechanization, chemistry, and biology in agriculture. Therefore, developing human resources in the agricultural sector is an issue of great concern in Vietnam. Resolution No. 26 / NQ -CP dated February 27, 2023 of the Government Promulgating the Government's Action Program to implement Resolution No. 19-NQ/TW dated June 16, 2022 of the Central Executive Committee the Party (XIII term) on agriculture, farmers, and rural areas until 2023, with a vision to 2045, has placed special emphasis on developing human resources in the agricultural sector, this is considered a long-term plan. on human resource development the province's agricultural sector; is the basis for proposing solutions to develop the industry's human resources to serve the tasks of socio-economic development and ensuring national security and defense. Research the current status of human resources in Vietnam's agricultural sector to evaluate the strengths and achievements, limitations, and strengths of the human resource development process. resources of Vietnam's agricultural sector, from which it is necessary to propose a number of recommendations to develop human resources in Vietnam's agricultural sector.

2. Theoretical Basis for Human Resource Development in the Agricultural Sector
2.1 Concept of Human Resources in the Agricultural Sector
Human resource is human strength, located in every human being and making humans active. That strength increasingly develops along with the development of the human body and to a certain extent, people are qualified to participate in the labor process, people have labor capacity (Tran Xuan Cau and Mai Quoc Chanh, 2008). Thus, human resources is the available capacity of each person in an organization, an economic industry or the economy. Human resources are human resources, the most important and dynamic factor of socio-economic growth and development. The reality of the world's development process has confirmed the very important role of human resources, which is the human...
factor in the development of an economy. The concept of human resources has been popular in countries with developed economies since the mid-twentieth century. Japan offers three principles in socio-economic development, all of which are related to people, in which human resource development is the decisive measure (Pham Minh Hac, 2001) [8]. For our country, since the Communist Party of Vietnam advocated economic reform in 1986, the concept of human resources has been widely used (Nguyen Tiep, 2005) [10].

Also referring to the quality of each person. Begg et al. (1995) [5] said that "Human resources are understood as the entire level of expertise that people accumulate, capable of bringing income in the future." Hybrid".

Vietnam Encyclopedia (2003) defines “Agriculture is the basic material production sector of society; Who uses land for farming and animal husbandry; Exploiting plants and animals as materials and labor materials mainly to create food and some raw materials for industry. Is a large production industry, including many specialties: cultivation, animal husbandry, and agricultural product processing; In a broad sense, it also includes forestry and fisheries.

From the concepts of human resources and the concept of the agricultural sector, the author introduces the concept of human resources in the agricultural sector as follows: Human resources in the agricultural sector are a part of the national human resources, including the entire workers from the lower limit of working age or older who are working in the agricultural industry and potential workers in the agricultural industry (capable of working but not participate in labor).

Human resources in the agricultural sector include:
- Human resources participating in the sector's activities: i) agricultural officials are those working in state management agencies of the agricultural sector; ii) people working in the industry's business units; iii) farmers working in the production sectors of the industry (Ministry of Agriculture and Rural Development, 2011) [2].
- Human resources that have not participated in the industry's activities are people who have the ability to work but have not yet participated in work, such as: people who are studying technical expertise in the industry, people who do not have a need for work, housewives...) (Nguyen Tiep, 2005) [10].

2.2 Concept of Human Resource Development in the Agricultural Sector

Bui Van Nhon (2006) [9] defines "Human resource development as the totality of forms, methods, policies and measures to perfect and improve the quality of human resources (intellectual, physical and moral), social psychology) to meet the human resource requirements for socio-economic development in each stage of development. The author explains that the quality of human resources includes mental, physical and mental factors. The physical health of human resources is physical health and mental health. The intelligence of human resources is considered and evaluated from the following perspectives: cultural level, technical expertise and practical labor skills of employees. The socio-psychological qualities of human resources are reflected in discipline, self-discipline, a spirit of cooperation and industrial style, and a high sense of responsibility... The author also mentioned the HDI index as an indicator. synthesized to evaluate the quality of human resources. The author also believes that for each economy, human resource development plays a more decisive role and significance than human resource growth, especially in the context of population, labor and economy as in Vietnam. According to the Institute of World Economy (2003) [14] "Human resource development, from a country's perspective, is the process of creating a dynamic workforce with skills and using them effectively, from an individual perspective. The cause is improving skills, action capacity and quality of life to increase labor productivity and income. Human resource development is activities aimed at improving and encouraging the better contribution of knowledge and physical strength of workers, better meeting production needs. Knowledge is gained through training and experience, while physical strength is gained through nutrition, physical exercise and medical care. This concept refers to developing a country's human resources through activities to improve the knowledge and physical strength of workers. For a country, the above activities are macro policies in the fields of education, training, and health. The above concepts cover the quality of human resources, including physical strength, mental capacity, moral qualities, and human resource development to improve labor productivity and income. However, the concepts do not yet exist. refers to the quantity and structure of human resources.

According to the author, human resource development in the agricultural sector is the rationalization of quantity (scale), improvement of quality, appropriate structure and effective use of human resources, expressed through reasonable human resource structures, improving physical strength, mental strength, and spiritual strength to improve labor productivity and income of workers in the agricultural industry.

3. Research Methods


4. Research Results

4.1 Some Indicators of Population and Labor in Vietnam

Vietnam's average population in 2022 is estimated at 99.46 million people, an increase of 957.3 thousand people, equivalent to an increase of 0.97% compared to 2021. Of the total population, the urban population is 37.35 million people, accounting for 37.6%; the rural population is 62.11 million people, accounting for 62.4%; male 49.60 million people, accounting for 49.9%; female 49.86 million people, accounting for 50.1%.

Vietnam's poverty rate has always tended to decrease over time, reaching 6.8% in 2018 and decreasing to 4.2% in 2022 (Table 1). Vietnam has achieved many achievements in reducing the poverty rate of the population in recent times, through State and local policies. The literacy rate of the population aged 15 and over tends to increase and reach 96.1% in 2022. Vietnam's HDI index continuously increased in the period 2018-2022 and reached 0.737 in 2022. Vietnam Nam has been part of the High
Human Development Group since 2019 and has made steady progress in all three dimensions of the HDI since the 1990s. In 2022, the average income per person per month at current prices will reach about 4,673 million VND, an increase of 11.1% compared to 2021. The average income per month in 2022 in urban areas will reach 5,945 million VND. This number has increased nearly 10.6% compared to 2018 and increased 11% compared to 2021. Compared to rural areas with an average income in 2022 of 3,864 million VND, urban workers have an income on average, it is nearly 1.54 times higher (General Statistics Office, 2023)\(^\text{[12, 13]}\). The labor rate in agriculture tends to decrease in the period 2018-2022, due to economic restructuring, however, the labor rate in agriculture, forestry and fisheries remains high, accounting for 27.5% in 2022, but the industry's GDP contribution to the economy will only reach 11.8% in 2022 (Table 2). This shows that the industry's labor productivity is low and has not created much value; Meanwhile, in 2012, China had 10% of agricultural workers but contributed 8% to GDP (Worldbank, 2014)\(^\text{[15]}\).

4.2 Quality of Personnel

- **Academic level**

According to the General Statistics Office (2022)\(^\text{[11]}\), the population aged 15 and older who can read and write in Vietnam in general and rural areas of the province tends to increase in the period 2018-2022 and reach a rate of 94.8 % of the population aged 15 and over who can read and write in rural areas by 2022 (Table 3).

4.2.2 Scale of Human Resources

The trend of shifting labor from agriculture, forestry and fishery to industry, construction and services causes the proportion of labor in agriculture, forestry and fishery to decrease, specifically: Employed workers in economic sectors in 2022 will reach 50.6 million people, of which: Workers working in the agriculture, forestry and fisheries sector will be 13.9 million people, accounting for 27.5% of the total number of workers. Working for the whole country; the industrial and construction sector has 16.9 million people, accounting for 33.4%; The service sector has 19.7 million people, accounting for 39% of the total number of workers (General Statistics Office, 2022)\(^\text{[11]}\). The proportion of workers working in agriculture, forestry and fishery tends to decrease from 37.6% in 2018 to 27.5% in 2022 (Table 2).

### Table 1: Some indicators of Vietnam in the period 2018-2022

<table>
<thead>
<tr>
<th>Targets</th>
<th>Single geographic</th>
<th>Year 2018</th>
<th>Year 2019</th>
<th>Year 2020</th>
<th>Year 2021</th>
<th>Prel. 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Average population</td>
<td>Thous. persons</td>
<td>95,385.2</td>
<td>96,484.0</td>
<td>97,582.7</td>
<td>98,504.4</td>
<td>99,461.7</td>
</tr>
<tr>
<td>2. Poverty rate</td>
<td>%</td>
<td>6.8</td>
<td>5.7</td>
<td>4.8</td>
<td>4.4</td>
<td>4.2</td>
</tr>
<tr>
<td>3. Literacy rate of the population aged 15 and over</td>
<td>%</td>
<td>94.8</td>
<td>95.8</td>
<td>95.4</td>
<td>95.7</td>
<td>96.1</td>
</tr>
<tr>
<td>4. Human Development Index (HDI)</td>
<td></td>
<td>0.693</td>
<td>0.703</td>
<td>0.706</td>
<td>0.726</td>
<td>0.737</td>
</tr>
<tr>
<td>5. Average life expectancy is calculated from birth</td>
<td>Year</td>
<td>73.5</td>
<td>73.6</td>
<td>73.7</td>
<td>73.6</td>
<td>73.6</td>
</tr>
<tr>
<td>6. Monthly average income per capita at current prices</td>
<td>Thous. dongs</td>
<td>3874</td>
<td>4295</td>
<td>4230</td>
<td>4205</td>
<td>4673</td>
</tr>
</tbody>
</table>

**Source:** General Statistics Office (2023)\(^\text{[12, 13]}\)

In 2022, the labor force aged 15 and over will be 51.7 million people. In terms of labor force structure, the rate of male workers participating in the labor force reached 53.2%, higher than the female rate of 46.8%. The structure of the labor force divided by urban and rural areas also has a large difference, although in recent years the proportion of the labor force in urban areas has increased, but in general, the labor force is In Vietnam, is still mainly concentrated in rural areas, accounting for 62.8% (General Statistics Office, 2023)\(^\text{[12, 13]}\).

### Table 2: Some indicators of the agriculture, forestry and fisheries sector

<table>
<thead>
<tr>
<th>Targets</th>
<th>Single geographic</th>
<th>Year 2018</th>
<th>Year 2019</th>
<th>Year 2020</th>
<th>Year 2021</th>
<th>Prel. 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross domestic product at current prices by economic sector</td>
<td>%</td>
<td>12.31</td>
<td>11.78</td>
<td>12.66</td>
<td>12.56</td>
<td>11.88</td>
</tr>
<tr>
<td>The ratio of agricultural workers to the total number of workers</td>
<td>%</td>
<td>37.6</td>
<td>34.5</td>
<td>33.1</td>
<td>29.1</td>
<td>27.5</td>
</tr>
</tbody>
</table>

**Source:** General Statistics Office (2023)\(^\text{[12, 13]}\)

### Table 3: Percentage of literate population at 15 years of age and above by sex and by residence

<table>
<thead>
<tr>
<th>Targets</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Preliminary - Prel. 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>94.8</td>
<td>95.8</td>
<td>95.4</td>
<td>95.7</td>
<td>96.1</td>
</tr>
<tr>
<td>City</td>
<td>97.7</td>
<td>98.3</td>
<td>97.9</td>
<td>98.1</td>
<td>98.3</td>
</tr>
<tr>
<td>Countryside</td>
<td>93.2</td>
<td>94.3</td>
<td>93.9</td>
<td>94.2</td>
<td>94.8</td>
</tr>
</tbody>
</table>

**Source:** General Statistics Office (2023)\(^\text{[12, 13]}\)

- **Technical qualification**

The quality of agricultural, forestry and fishery labor is assessed at a low level. The proportion of workers in Vietnam's agriculture, forestry and fisheries sector who have been trained is only 4.1% (by 2022), most of them are still unskilled, simple workers, working based on experience. Seasonal, lack of skilled labor; Meanwhile, the country's rate of trained workers is 26.3%. Skilled workers in agriculture, forestry and fisheries tend to increase from 7.33% in 2019 to 12.14% in 2022 (Table 4).

### Table 4: Technical expertise of workers working in the economy

<table>
<thead>
<tr>
<th>Targets</th>
<th>Year 2018</th>
<th>Year 2019</th>
<th>Year 2020</th>
<th>Year 2021</th>
<th>Year 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>21.9</td>
<td>22.6</td>
<td>23.6</td>
<td>26.1</td>
<td>26.3</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>4.1</td>
<td>4.0</td>
<td>4.6</td>
<td>4.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Skilled agricultural, forestry and fishery workers</td>
<td>9.18</td>
<td>7.33</td>
<td>7.35</td>
<td>12.21</td>
<td>12.14</td>
</tr>
</tbody>
</table>

**Source:** General Statistics Office, 2023\(^\text{[12, 13]}\)
According to statistics from the Ministry of Education and Training, in 2022 the country will have more than 521,000 students enrolled in 25 training fields. Of these, there are only 7,100 students enrolling in the fields of agriculture, forestry, fisheries, and veterinary medicine - accounting for 1.37%. The decline in the number of learners in the agricultural sector is not only occurring in university training but also in vocational education. The primary college and short-term vocational training system is declining rapidly. College degrees tend to decline from more than 6,000 students in 2016 to more than 4,300 in 2021. Some schools achieve less than 50% of college enrollment targets compared to registration targets. The intermediate school system also decreased from more than 2,900 students in 2017 to more than 2,100 in 2021, a decrease of up to 39%. Primary and vocational training systems of less than three months also decreased sharply from more than 2,400 students in 2016 to 532 students in 2021.

Contrary to the trend of decreasing enrollment, the need for human resources in the fields of agriculture, forestry and fisheries is increasing. In the last 5 years, most businesses said there is a serious shortage of university-educated human resources.

### 4.2.3 Labor Productivity

The agricultural sector has the lowest labor productivity compared to other sectors, in 2022 it only reached 81.1 million VND/person/year, much lower than the country's overall labor productivity of 188 million VND/person/year (Table 5). Labor productivity in the agricultural sector tends to increase in the period 2018-2023 due to: The increasing level of education and technical expertise of agricultural workers and the application of science and technology to Agricultural production leads to increased labor productivity.

#### Table 5: Labor productivity by kinds of economic activity

<table>
<thead>
<tr>
<th>Targets</th>
<th>Unit</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Mill. dongs/person</td>
<td>129.1</td>
<td>141.0</td>
<td>50.1</td>
<td>72.8</td>
<td>88.0</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>Mill. dongs/person</td>
<td>42.2</td>
<td>48.2</td>
<td>57.4</td>
<td>74.7</td>
<td>81.1</td>
</tr>
<tr>
<td>Ratio</td>
<td>%</td>
<td>32.69</td>
<td>34.18</td>
<td>8.24</td>
<td>43.23</td>
<td>43.14</td>
</tr>
</tbody>
</table>

Source: General Statistics Office, 2023[12, 13]

### 4.2.4 Income

The income of workers in Vietnam's agriculture, forestry and fisheries sector in the period 2018-2022 is always much lower than other economic sectors, only equal to 56.22% of the average income of a worker in the year. 2018, by 2022 it will reach 58.42% (Table 6).

The average income of workers by economic sector in the second quarter of 2023 compared to the same period last year in three economic regions increased, of which the average income of workers in agricultural and rural areas increased. Forestry and fisheries recorded the highest growth rates. In the second quarter of 2023, the average income of workers in the agriculture, forestry and fisheries sector is 4.1 million VND, an increase of 6.7% over the same period last year (the same period in 2022 increased by 3.6%). Workers working in the service sector have an average income of 8.2 million VND, an increase of 5.2% over the same period last year, 1.7 times lower than the growth rate of the same period in 2022 (increase of 8.7%). The average income of workers working in the industrial and construction sector is 7.8 million VND, up 4.2% over the same period last year, nearly 3 times lower than the growth rate of workers' income in the same period. 2022. In terms of increase, the average income of workers in the agricultural, forestry and fishery sector has the highest increase, however, in terms of absolute value, the income of this sector is much lower. Compared to the other 2 regions (General Statistics Office, 2023b)[13].

#### Table 6: Average compensation per month of employees in the acting economic sector

<table>
<thead>
<tr>
<th>Targets</th>
<th>Unit</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Thous. dongs</td>
<td>2726.6</td>
<td>4038.2</td>
<td>22841.1</td>
<td>3549.5</td>
<td>53878.8</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>%</td>
<td>56.22</td>
<td>54.01</td>
<td>52.18</td>
<td>61.97</td>
<td>58.42</td>
</tr>
</tbody>
</table>

Source: General Statistics Office, 2023[12, 13]

### 5. Recommendations

To develop human resources in Vietnam's agricultural sector, it is necessary to carry out many synchronous solutions based on good use of existing human resources. Within the framework of the study, the author proposes the following main groups of solutions to develop human resources in Vietnam's agricultural sector:

Firstly, the group of solutions on human resource development planning in the agricultural sector Planning for human resource development in the agricultural sector to meet socio-economic development goals, including the need to build a team of agricultural officials at all levels with sufficient quantity, reasonable structure and qualifications, forming high-quality human resources. Synchronously develop the industry's human resources in each locality; At the same time, prioritize human resource development in areas of advantage in each locality.

Second, the group of solutions on training and fostering human resources in the agricultural sector. Improve educational level, technical expertise and working capacity for officials, production capacity for farmers, enhance working skills for agricultural workers on the basis of Vocational Training Plan agriculture for rural workers in the period 2022-2025.

Training to enhance the value of key products, products imbued with regional ethnic identities, associated with rural agricultural tourism. The content of the training program must follow the local agricultural development planning and the needs of workers in each area. Accordingly, after receiving vocational training, workers have the opportunity to use and apply the knowledge they have learned to production practice, improving the effectiveness of vocational training.

Strengthen training and fostering scientific and technical knowledge of advanced and modern agricultural production for farmers through a team of agricultural officials, especially commune agricultural officials who are the most direct and closest level to the Surname. To improve the professional qualifications of farmers, it is necessary to increase training for farmers at primary, intermediate and higher levels.

Improving training capacity for agricultural occupations: For occupations, the Ministry of Agriculture and Rural Development has developed a program framework and...
curriculum in the previous period, localities continue to inherit, update and supplement these New production, business, and processing knowledge and skills, consistent with production and business requirements; Meets regulations and standards.

For training establishments, it is necessary to build a system of standard textbooks and lectures for agricultural occupations in accordance with the conditions and planning of the agricultural sector in each locality, regularly renewing content and modernizing it. The training program follows the regional program and moves towards international standards.

Third, a group of solutions on increasing income for agricultural workers
Implement the regime for agricultural officials at all levels, research and supplement allowances and training regimes for agricultural officials.
Increase income for farmers through developing markets for agricultural products, ensuring stability in production; Strengthen market and price control, ensure quality and prices of essential goods and products to serve the needs of people's life and health; Economic development is associated with hunger eradication and poverty reduction, creating jobs to ensure income for people.

6. Conclude
Human resource development in the agricultural sector is the overall change in the scale and quality of the sector's human resources to suit the development of the agricultural sector and socio-economics; That is the change in the number of workers and improving the quality of human resources through increasing the proportion of workers with educational qualifications and technical expertise, enhancing the working capacity of agricultural workers, ensure a reasonable labor structure between labor groups, between workers in economic regions and sectors within the industry. Developing human resources in Vietnam's agricultural sector has received attention from the Party and State and has been implemented in localities across the country. However, human resources in the agricultural sector are still limited in quantity, quality and structure. To have quality human resources to meet the requirements of socio-economic development, it is necessary to have the active participation of localities and synchronously implement solutions to develop human resources in the agricultural sector.

7. References
1. Party Central Committee (term XIII). Resolution No. 19-NQ/TW dated June 16, 2022, on agriculture, farmers, and rural areas until 2023, vision to 2045.