

Impact of Industrial Network 4.0 to Develop High-Quality Human Resources in Vietnam Fisheries Industry

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Abstract:

The paper presents human resources, high quality human resources, and development of high - quality human resources in Vietnam's fisheries sector. The fisheries sector is a key sector of the Vietnamese economy, contributing significantly to GDP and creating jobs for millions of people every year. However, in the current context of globalization, the labor force of the fisheries sector needs to be trained and developed to keep pace with the development of science and technology.

Keywords: *High-quality human resource, evaluate industry, 4.0 industrial revolution, integration*

1. Introduction

Entering the twenty-first century, international integration has become a common trend of an era that attracts small and large countries to participate in that process to seek opportunities for development. Each country has its own way of integration, but the experiences of those countries that are evaluated as effective and sustainable integration such as the US, Japan, Singapore ... show them the key to their success is that they know first. Investing in human factors, developing high-quality human resources and a decisive driving force for the country's development in terms of integration. For example, Singapore, in order to become one of the "four East Asian tigers", is a hub for the world's trade and services, they have always focused on building this island nation into an "intellectual island". emphasizing the decisive role of the quality of human resources with the view "talent is the leaven for the rise of the country".

Meanwhile, cheap labor lost the competitive advantage of emerging markets in Latin America and Asia. In particular, the Industrial Revolution 4.0 and the new generation FTAs threaten not only the employment of low-skilled workers but also intermediate-skilled workers if they are not equipped with new skills - skills. creation. This will be a significant factor affecting economic growth in developing countries because untrained manpower is an important component of these countries' economic growth.

Vietnam's fisheries sector has attracted more than 8% of the country's workforce in recent years with a significant increase in trained labor as a basis for the development of offshore fishing fleets as well as the level of being proactive in seed supply for aquaculture makes the industry's production value reaches more than 228 trillion dongs in 2018, up by 7.7% compared to 2017. However, the industry's human resource is still limited. Processing comes from spontaneity in fishing activities, an explosion in processing activities, risks and seasonality in fisheries production and exploitation, leading to a sharp fluctuation in labor supply in some periods. points of the year. In the context that Vietnam becomes more and more deeply involved in the world economy as well as the impact of the industrial revolution 4.0, the development of high quality human resources will be the basis for the fisheries industry to take advantage of. Incentives from free trade agreements signed and towards sustainable growth.

2. Research overview

2.1. Human resources, high quality human resources

The concept of human resources is researched by many organizations and researchers in the field of labor and society because this is one of the decisive factors to the economic growth of each country. In particular, in the context of integration and the impact of Industry 4.0, the human resource issue is even more important because it will determine the efficiency of using parameters such as technology and capital. The

future prosperity of individuals and nations will depend more on the quality of labor (Lucas, 1988). In 2015, the Bank of England forecasted that about 95 million traditional workers would lose their jobs within the next 10-20 years, a series of old jobs will be lost, the labor market in this country as well as Internationally, there will be a strong division between the low-skilled labor and the highly skilled labor.

According to the World Bank Organization (WB), human resources are the entire human capital, including physical strength, intelligence, and occupational skills that each individual owns and can mobilize in the production and business process. or an activity. The World Bank considers human resources as a special capital source used to exploit, use and create other capital sources. Basic criteria for assessing human capital are health factors, qualifications, skills of each individual used in the creation of products.

International Labor Organization (ILO) identifies human resources with the workforce. According to the ILO, human resources are the overall human labor potential of a country that has been prepared to a certain extent, capable of mobilizing into the country's socio-economic development process. That potential is the sum of the physical, mental and human capacities of a nation to respond to a certain structure of labor required by the economy.

From the above two concepts, human resources are understood as human resources considered in two aspects: (1) with the meaning that the place where resources are born and located within each person, this resource will generate developed with the development of each individual. At a certain stage, it will participate in the production process of creating wealth for society. This is the factor that shows the difference between human resources and other resources. (2) Human resources include the sum of all human resources in a particular country or industry. This factor refers to the size, the number of people involved in production activities and will depend on the size and population structure of each country. Thus, a country's human resources will be assessed in two aspects: the quantity and quality of labor so the wealth created by each country will have a huge difference.

In current conditions, labor quality will determine labor productivity as well as production efficiency, thereby affecting the competitiveness of industries and countries in the domestic and international markets. The goal of nations today is to develop high-quality human resources for economic growth, creating more wealth for society. So the question is what is high quality human resource and high quality human resource development? These two concepts will be assessed by what criteria will be the basis for each country to orient its own human resource development in the future.

High-quality human resources are the social labor division with high levels of education and technical expertise; good labor skills and able to quickly adapt to the rapid changes of production technology; have good health and qualities, have the ability to apply creatively the knowledge and skills that have been trained in the production labor process to bring productivity, quality and high efficiency (Do Van Dao, 2009). Or is it the group of trained human resources, good knowledge of a field of work, proficient in job performance skills, good physical and development potential in the work environment to meet current and future job requirements of the organization. Outstanding characteristics of high quality human resources are shown in the following:

Good fitness: According to WHO, employees' physical strength includes physical and mental health. These two factors will determine the ability of employees to work under different conditions, long and continuous working conditions.

I am having knowledge expressed through professional and technical qualifications, the status of training: the percentage of trained human resources by region, industry, labor structure by professional level.

Good working skills: the ability to apply but knowledge and knowledge to work, is one of the decisive factors for the success of the employees' career and directly affect the results — production and business of each agency and enterprise.

Having good qualities and professional ethics: Having a level of awareness of life value, discipline, a sense of responsibility for the job ...

In the context of science and technology increasingly impacting deeply on social life, the knowledge of workers equipped in training institutions does not guarantee that they will meet the needs of the labor market. Dynamic is always volatile. The direct retraining at the working unit's employees, being sent to training at the training units under the orientation of the employer unit is of utmost important importance, ensuring the workers have access to advanced production methods, increased labor productivity, and improved personal income. This requirement poses at all levels from country, industry to business need to develop high quality human resources to ensure the sustainable development of each country.

Meanwhile, developing high-quality human resources is understood as the process of changing the quantity, structure and quality of high-quality human resources to meet production and business requirements of enterprises. both in the present and in the future, at the same time improve the career level, improve the efficiency of the workforce and the performance of the business. This is essentially an ongoing process and is part of a broad range of management interventions including professional development (related to the development of skills and knowledge that allow workers to plan and deliver). make decisions about learning, training and career options) and organizational development (aligning human resource strategies according to the organization's mission, vision, values and strategies) thereby achieving its goals. improve the performance of individuals and organizations. Specifically, the following criteria will be used to evaluate the development of high quality human resources:

The change in quantity, structure and quality of human resources, meeting production - business requirements over time: The number and structure of labor according to the qualifications of each industry and between industries over time with the quality of human resources.

The level of improving the professional qualifications for human resources: Conditions to improve the knowledge, expertise and professional qualifications for employees; conditions for training and retraining for employees to meet the organization's requirements

Improving employees 'working efficiency: workers' performance is shown by improving their income or increasing the employee's contribution to production value growth. of the industry.

Improve organizational performance: for the manufacturing industry, the performance of the organization will be reflected in changes in labor productivity of the industry over time and compared to other industries.

The above groups of criteria for evaluating the level of development of high quality human resources are now widely used in assessing the development of human resources for organizations, especially enterprises and industries. In this paper, the author will also use these four groups of indicators to assess the development of high quality human resources in Vietnam's fisheries sector.

2.2. Developing high quality human resources in Vietnam's fisheries sector

Currently, Vietnam is a member of the WTO, participating in 17 bilateral and regional FTAs, including two new-generation free trade agreements: CPTPP and EVFTA. This is an opportunity for our country's goods to access advanced markets in the world, increase exports of goods and services, including aquatic products. However, to be able to take advantage of those advantages, aquatic products must meet the requirements of technical standards in aquaculture, mining and processing. The Industrial Revolution 4.0 with the development of biotechnology, physics and digital poses a challenge to the fisheries industry in Vietnam to ensure production, management and administration.

Firstly, developing high quality human resources will positively impact on aggregate productivity. High quality human resources initially create a better income for workers because education and experience are the determinants of their income, but the change in the quality of the workforce affects the factor of total productivity (TFP). Solow's growth model also shows that the three variables that directly affect each country's

economic growth are capital (K), labor (L) and technology (T). In particular, labor is considered in the form of human capital, the determinant of the process and production efficiency (expanded Solow model). Technology factors increasingly play a central role in economic growth, but to achieve that goal, each person's education level is crucial to the efficiency of application and development of new technologies. Accordingly, the higher the level of human capital will accelerate the process of technological diffusion in an economy. This allows countries with low technology ground in the world to catch up faster with the leading countries. As such, human capital development, in other words, the development of high quality human resources, will play a decisive role in developing countries in order to keep pace with the development of industrialized countries. The context of integration and the industrial revolution 4.0 is going strong. This will be an issue that domestic industries need serious and methodical human investment in order to create a quality human resource, creating a drastic change in growth in the coming years.

Secondly, developing high quality human resources will help the domestic fisheries industry increase productivity, improve product quality, thereby increasing competitiveness in the domestic and international markets. Vietnam's seafood industry has very specific production and processing characteristics, so the labor demand is a combination of healthy, experienced workers (especially in fishing) and human resources. Well-trained, have access to advanced technology as well as knowledge of international law. According to the author, high-quality human resources for Vietnam's fisheries sector in the coming time will be determined to include the following groups: (1) managers, policymakers, and business managers; (2) direct labor; (3) researchers, scientific staff. Under the current conditions that Vietnam is a member of many free trade agreements, the fishery products enjoy many tariff preferences but the conditions of enforcement and market access are very strict, forcing the Member countries must abide by strict technical conditions. In order to ensure that the fisheries industry can benefit from these free agreements, the issue of workers in the industry must have knowledge and skills in production, processing and market access. Improving labor quality or in other words developing high quality human resources will allow Vietnam to exploit the benefits of integration.

3. The actual situation of business activities of Vietnam's fisheries sector

The statistics of 2018 show that Vietnam currently ranks fourth in the world in seafood export (after Norway, China and Russia), No. 1 in Southeast Asia and No. 2 in Asia, our country's fishery products. have exported to more than 170 countries around the world. If in 1986, Vietnam's seafood export was only about 100 million USD, by 2018 the export value of this sector would have reached over 9 billion USD.

In 2018, the United States, the EU, Japan and China continued to be the top four export markets of Vietnam's seafood, accounting for 54.9% of the total seafood export value. The markets with strong seafood export values are Thailand (up 17.1%), Hong Kong (up 20.9%) and the UK (up 14.5%). The export of shrimp and tra catfish products brought US \$ 3.8 billion and the US \$ 2.2 billion in 2018. These are demanding markets with very strict technical standards such as standards of antibiotic residues in water. However, the demand and affordability of these markets are very high, so domestic enterprises have tried to improve the production process. processing to meet specifications. In terms of market share, Vietnam is currently the No. 1 country in terms of pangasius, 2nd in the world shrimp but overall for fishery products, it ranks 3rd, after China, with strong tilapia. Norway with salmon products.

Achievements in seafood exports over the past 30 years are a result of the rapid growth of domestic processing facilities. The level of production, processing and productivity of Vietnamese businesses has improved significantly over the past period. The number of aquatic product processing establishments increased rapidly: from 250 processing factories concentrated mainly in the southern provinces in 2000 to 429 enterprises eligible for export in 2012 and over 636 enterprises producing industrial aquatic products. together with more than 3,300 small processing facilities in 2018. Exporters all achieved certificates of food hygiene and safety according to international regulations such as GAP, Global GAP, FOS, ASC, HACCP ... Exported products all meet strict standards of antibiotic residues, traceability of processed animals, regulations on animal feed in aquaculture ... Labor productivity of enterprises in the fisheries industry is operating. There have been

significant improvements in business results in recent years, namely: agriculture, forestry and fishery. In 2017, the average income per employee reached 5.3 million / month (up 3.9% compared to the previous year), while in the period 2011-2015 the average income / labor was 4.93 million. For the fishery sector alone, the growth rate of income in both exploitation, production and processing increased the income growth rate of 4.3% / year in the period of 2013-2017, much higher than the average growth rate common to the whole area. The number of employees working in the industry in 2007 was about 1.6 million people by 2018 was about 4.5 million people, the corresponding production value in these two years was 46,663 billion VND and 228,140 billion VND. On average, the value of production / labor was 29.16 million in 2007 and 50.7 million in 2018. The employment efficiency of the enterprise increased continuously during the period of 2011-2017, namely: in the period of 2011-2015 is 4.7 times, 2016 is 5.6 times and in 2017 it is 7 times. The share of the fishery sector in 2018 in the agriculture, forestry and fishery sector increased by 2.5% compared to 2012. All these indicators show that the quality of human resources of the fisheries sector has made great progress during the period. last time.

4. Situation of human resources in Vietnam's fisheries sector

4.1. Impact of international integration

The participation in signing new generation trade agreements such as CPTPP, EVFTA helps Vietnam's seafood industry have a competitive advantage compared to rivals Thailand, China, Indonesia, India ... Before CPTPP Having signed, Vietnam and Japan have had two free trade agreements signed between ASEAN and Japan and between Vietnam and Japan. However, when the CPTPP comes into effect, Vietnam's fisheries sector will have more opportunities to access the world's third largest market because the tax on shrimp and some fishery products will be reduced from 2.5% to 0%. This factor will help Vietnamese seafood compete on price better than other international exporters on the Japanese market.

Immediately after EVFTA takes effect, 90% of tariff lines on seafood products exported to the EU will be reduced to 0% in 3-4 years (the current import tax rate to the EU is about 14%). EVFTA Agreement not only helps Vietnamese enterprises to benefit from tax rates but also greatly benefits from the adjustment policy. The tax reduction will help domestic exporters to consolidate their position in the EU market in the near future - the second market of Vietnam in 2018. However, the benefits from free trade agreements trade are only achieved when domestic exporters have to meet environmental and technical standards. Some basic regulations on standards in fishing, aquaculture and processing of EU and Japanese fisheries applied to imported fishery products include:

Countries that want to bring seafood into the EU must be on the list of countries that can be exported to the EU. Each shipment must be accompanied by a certificate of compliance with EU requirements issued by the authorities of the exporting country. Products must meet specific hygiene standards including freshness, cleanliness, maximum microbiological contamination (including pathogenic and indicator microorganisms), chemical estimation (heavy metals, antibiotics and pesticides), toxins, marine biotoxins and parasites. Manufacturers of aquatic products exported to the EU must organize to supervise their production and processing activities in accordance with HACCP.

Japan will maintain a 100% inspection of Furazolidone, Enrofloxacin and Sulfadiazine criteria for shrimp consignments imported from Vietnam. However, since October 2016 Japan removed from the monitoring list of Sulfamethoxazole, Sulfadiazine and Chloramphenicol in farmed shrimp. Additives must be on the list of additives used in food, minimize the content of additives used in food. Customs authorities consider whether products are on the list of quotas or not; carry out import and quarantine procedures according to regulations; Labeling in accordance with JAS is the goods that ensure food hygiene and safety.

In free trade agreements, Vietnam also pledged to open the door in the field of agriculture and fisheries of other countries to have opportunities to access the Vietnam market with preferential tax rates. It can be seen that the value of seafood imports in recent months has increased very high: in the first 6 months of 2019, the import

value of agricultural products (including seafood like crabs, lobsters ...) from the United States increased by 60% over the same period last year to more than 120 million. In particular, in the context of the trade war between China and the United States, there are many unusual developments, Vietnam will be the market of US agricultural products including seafood. The competitive pressure on imported goods soared in the coming time, forcing the fishery industry to make changes to adapt and compete on the domestic market. Management skills, business strategy, the skill level of workers as well as operating policies will be a decisive factor for the development of the fisheries sector in the future.

The above technical standards, together with a series of groundbreaking studies in the field of environment, food processing, and aquaculture in developed countries (as a result of the industrial revolution 4.0), are challenges. Very big for Vietnam's fisheries industry in the near future. In order to provide information and data on aquatic product production and processing processes, it is required to collect more fully, which forces producers who want to compete to follow strict control processes from raw materials to production. products and delivered to consumers. And to do well this work requires the fisheries industry to change the approach from passive to active in production and business activities. The effect of these changes will depend on the human factor rather than the technological factor - improving the quality of human resources at all levels is required by the fisheries sector:

- (1) Policy managers must be knowledgeable about the international and internal environment in order to make adjustments so that producers can adapt to the new environment;
- (2) The management level in enterprises and manufacturers proactively implements commitments on integration and application of international standards to all stages from exploitation, farming, processing and distribution to consumers. final;
- (3) Workers need to increase investment in skills to acquire new technology in seafood processing and manufacturing
- (4) Scientists in the fisheries sector strengthen cooperation with producers, making intensive investments in seed research, processing technology, exploitation and aquaculture technology as well as technology for preserving aquatic products. In order to improve the quality of products to serve domestic and international needs.

The requirements on the quality of human resources in the coming time for the fisheries sector are really a difficult problem for this industry because at present, human resources in this industry reveal a lot of existence, greatly affecting sustainable growth. of the industry in the coming years. Specifically, the challenges coming from the quality of human resources of Vietnam's fisheries sector will be analyzed in the following section.

4.2. Challenges from the intrinsic quality of human resources of the fisheries sector

In addition to the great achievements of the fishery industry in recent years, human resources for the industry now have many shortcomings in quality and quantity in shortage. The forecast of the human resources needs of the industry as a basis for the training of schools and management agencies is very limited. The human resource development policies for the fisheries sector have not provided specific human resource needs for each type of fishing, farming and processing. Some specific issues are as follows:

- Firstly, the direct labor group, including:

- (1) fishing workers: training of this group of workers is still mainly in the form of hereditary, the occupation succession of most fishermen is considered by default. Moreover, the relationship between ship owners and crew members is almost no contractual obligation, rights and interests of the parties. The traditional way of training is no longer suitable to the way of offshore fishing which requires besides experience requiring in-depth knowledge and the ability to use modern equipment. The full-time national institution for high-quality human resources, the University of Nha Trang, currently enrolls only 30 students in the fishing industry - a small amount compared to actual needs.

In the integration commitments (such as CPTPP, EVFTA), Vietnam has committed to implement measures to protect the marine environment, protect aquatic resources, prevent overfishing and over-capacity. On the other hand, for Vietnamese goods to enter the EU market, unreported and unmanaged exploitation problems will be banned. In order not to be penalized with the IUU card, the operators must install monitoring equipment, make a declaration in accordance with regulations. This requires the operators to have the skills to use modern information equipment, management skills, to monitor exploitation activities. In fact, the team of captains, chief engineers and crew members are mainly trained for short-term certificates with the low-level ground. Another problem is that the lack of fishing labor, fishermen abandon the sea, leading to the ship owners always in shortage of crew members. Phu Yen needs about 8,500 offshore fishing workers, but there is always a shortage of labor and this is also the general situation of our country's coastal provinces. The causes of this situation are: (i) the concentration of labor for vocational training faces many difficulties because they often go to the sea; (ii) this is a risky career, so labor tends to move to other less risky occupations; (iii) the income of this worker is lower than that of a processing enterprise.

(2) Group of laborers working in aquatic product processing: Characteristics of laborers working in aquatic product processing are seasonal workers, unskilled workers accounting for over 90%, the level of manpower fluctuation is very high and labor is scarce. . Typically, Ba Ria - Vung Tau province with more than 900 seafood processing facilities is always in shortage of labor: unskilled labor is lacking, qualified laborers are harder to find. The demand for labor of processing seafood in the whole province in 2019 is 9,000 people but only meets about 60%. Due to the nature of the industry's work, it depends on the source of raw materials and customers so the production is sometimes discontinuous. On the other hand, workers always work in wet and stinking conditions, so most people only consider it a temporary job. To ensure production, businesses have to work overtime, increase wages, incentives for workers to improve welfare but workers still quit. A number of enterprises specializing in exporting aquatic products now organize short-term training courses for workers to ensure the quality and standards of export products, but after stable skills, some workers turn to Work for other businesses. This situation leads to enterprises not really interested in improving skills for workers due to disrespected labor agreements. It is this factor that leads to the quality of human resources for aquatic product processing not much improved, greatly affecting the productivity and competitiveness of the industry in the market.

- Secondly, the human resource group has been trained at universities and colleges to work in management positions in production and processing facilities: Currently there are 6 large universities with training in the country. create human resources related to the fisheries sector, including fishing and aquaculture. The National University also trains agricultural technology towards developing high quality human resources, applying science and technology to agricultural production, including fisheries. The number of annual enrollment of these schools is about 600-700 students but the number of graduates after working directly in aquaculture facilities is very small, mostly working off-line due to salary and unattractive working conditions. Therefore, there is a conflict between labor demand and supply, production facilities are in need of trained labor to develop production, while trained people tend to shift. change jobs.

- Thirdly, the group of human resources in research institutes: The Vietnam Academy of Agricultural Sciences is the leading unit in our country's agricultural research field. The quality of its human resources will determine the future of Vietnam's agricultural sector. However, the scientists who are working here face many difficulties stemming from the state management mechanism. First of all, the scientific financial management mechanism is too cumbersome and discouraging scientists when conducting research projects in the field of agriculture and fisheries. These are also problems encountered by scientists working in teaching units. On the other hand, the overlapping administrative mechanism among the units makes the performance much less effective. The funding for applied research has been narrowed, leading to the integration of basic research. The phenomenon of quitting scientists takes place strongly in the Vietnam Academy of Agricultural Sciences. All of these policy constraints have not created a motivation for this group of workers, leading to the difficulty of creating a breakthrough in agricultural and fishery development.

It can be seen that all the weaknesses in the quality of human resources are evident in the labor productivity of the fishery sector which is lower than the average of the whole economy. In 2017, the average income of employees / month was about 5.65 million, while the banking and finance industry was 9.74 million, the industry was 7.76 million. If there are no policy breakthroughs for human resources in the industry, Vietnam's fisheries will really be difficult to compete in the context of strong integration and the industrial revolution 4.0.

5. Solutions to develop high-quality human resources for the fisheries sector in the context of integration and the 4.0 industrial revolution

Free trade commitments in FTA trade agreements to which Vietnam is a member are aimed at reducing taxes, opening the markets for goods and services. This is also an opportunity but also a challenge for Vietnam's fisheries industry, because to exploit the benefits from the FTAs, the fishery industry must meet the rigorous standards in the process from fishing, production and processing. Moreover, the strong industrial revolution 4.0 in industrialized countries has changed the process of management, management and operation of enterprises. The requirement for transparency in the process increases, forcing managers to change from traditional management methods to modern management methods with the presence of more and more technology. In order to meet these requirements, the fisheries industry needs core solutions for human resources because ultimately people will be the deciding factor in all production processes. Therefore, the Resolution of the 8th Plenum of the Party Central Committee of the XII Party Council highlighted 7 key solutions to the implementation of the Vietnam Marine Economic Sustainable Development Strategy to 2030 with a vision to a year. 2045, emphasizing that Vietnam needs to give priority to the education, training and development of marine human resources. Some important groups of solutions for developing high-quality human resources in the near future are:

- Firstly, build and complete the overall strategy for developing high-quality human resources for the fisheries sector in the coming years in association with integration commitments, the market and the industrial revolution 4.0. This solution will contribute to basically overcome the situation of shortage in quantity, quality limitations, the irrationality of human resource structure, especially high-quality human resources of the fisheries sector. The strategy must clearly identify the objectives, scale, roadmap and overall mechanisms and policies. In particular, the strategic goal must prioritize the size, number and structure of each type of manpower accordingly. The strategy also builds a reasonable, predictive implementation roadmap, develops and completes specific mechanisms and policies to develop high-quality human resources comprehensively and synchronously under the of the 4.0 industrial revolution.

- Second, solutions for vocational training and higher education: The Government is currently implementing the project "Vocational training for rural workers until 2020", including vocational training for human resources in the fisheries sector. . The Ministry of Agriculture and Rural Development in collaboration with the Ministry of Labor, War Invalids and Social Affairs conducted a survey on vocational training for farmers in 7 provinces in 2015, the results show that provinces and cities nationwide have implemented 100% vocational training schemes for rural workers. However, in terms of quality requirements for vocational training for farmers, including fisheries, there are many shortcomings, especially the ability to focus farmers on vocational training is very limited. Human resources in the fisheries sector, including fishing operations, the training of crew members, motorbike drivers or captains face many difficulties because they still have to work, so they only reach 2.18% of the labor force. need certificates among workers in 7 provinces surveyed in 2015. According to a training plan this year and next year: a group of captains and chief engineers need certificates will account for 16.64% of workers who need training Every year, safe intensive aquaculture needs from 19.77% (in 2019) to 17.44% (in 2020). The model of Thang Binh District People's Committee, Quang Nam province is implementing a number of solutions to train captains and chief engineers in order to create a skilled labor force, understand the State's regulations on source exploitation and protection. to protect aquatic resources and ensure the safety of people and fishing ships to serve sea workers and promote their effectiveness. The

district's mechanism is to provide 100% funding for the training of shipmaster and chief engineer certificates, and at the same time to access central and provincial supports to promote the development of offshore fishing. If this model is replicated to other localities in the country, the quality of laborers working in fishing will quickly improve, requiring integration and sustainable development.

For highly-skilled labor groups, the solution is to strengthen the linkage between training institutions, policy-making agencies, and production facilities to enhance information on the human resource needs of the fishery sector. This will be the basis for schools to grasp the needs of society in both quantity and quality. Specifically, universities need to link with production facilities to give learners access to production practices. In the structure of the training program, the amount of time spent for students going on field trips increases, the number of theoretical hours decreases depending on each major so that learners can grasp the practical problems of their field of study, which can answer Applicable to the job immediately after graduation. On the other hand, between schools and policymakers (such as the Ministry of Agriculture and Rural Development, the Ministry of Industry and Trade), it is necessary to strengthen cooperation so that macro-related information in the sector can be immediately accessible to students. The updating and improving knowledge for lecturers through seminars, conferences and short training courses on integration, environment and sustainable development will spread down to learners, helping Manpower of the industry is increasingly improved in quality.

- Thirdly, solutions on policies to support human resource development include social security policies, employment policies, labor market development policies, science and technology policies. This is the problem. Macro nature, it is necessary to have the participation of related sectors in a synchronized manner.

First of all, the management agencies in the fisheries sector need to create mechanisms and policies to attract, use and treat high-quality human resources. The renovation of recruitment policy, the arrangement of using high quality human resources in management agencies and administrative agencies needs to be implemented in a way that is public, fair, objective, accurate and based on basis quality and the actual capacity of the employee. According to the conditions of each facility, it is necessary to create a breakthrough in remuneration as well as to honor high-quality human resources, implement a flexible salary policy based on the capacity and effectiveness of individual and collective contributions. Management agencies need to create a favorable working environment and promotion opportunities to motivate, stimulate and encourage employees to be creative, as well as ensure adequate conditions on facilities. quality and means of working and researching for young scientists and talents working in the fields of fisheries.

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