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Future human resource needs in Vietnam and the linkage with vocational education and training

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1. Context and some issues in human resource development

Vietnam's increase in population has led to an increase in its number of human resources. The quality of Vietnam's human resources has improved, seen in the growing educational level and technical expertise of local workers to partly meet the requirements of businesses and the labor market. Vietnam's tech workforce has developed essential technology skills to undertake most demanding job positions in production and business operations. According to the World Bank, Vietnam's human capital index (HCI) increased from 0.66 to 0.69 in the 10-year period from 2010 to 2020. In over 52 million workers, the proportion of trained workers holding degrees and certificates is 26.8% (as of September 2023), an increase of more than 2.5 times compared to 2000 (10.3%).

Currently, a network of vocational education and training (VET) institutions has been formed across the country, offering training in a variety of majors and using different training methods, with stronger links with the labor market. As for the VET system, the country has 1,904 institutions, including 407 colleges, 439 diploma awarding institutions and 1,058 VET centers. Notably, the number of private institutions has increased rapidly, with more high-quality training models in different majors provided in line with regional and global standards. Conditions to ensure training quality are enhanced. The system of occupational skills assessment bodies is also developed quite comprehensively with more than 200 sets of national occupational skills standards and nearly 100 sets of test banks for assessment and certification of occupational skills.

In the years to come, the digital economy, coupled with the fourth industrial revolution (Industry 4.0), would lead to changing skills and employment requirements, and Vietnam must overcome certain challenges in human resources development, especially high-quality and technical workers in key, new-technology, and high-tech industries: ICT, electronics and telecommunications, robot manufacturing, automobiles, equipment integration and automation, remote control, software manufacturing, digital products, information security, pharmaceutical manufacturing, production of biological products, environmental industry, clean energy, renewable energy, smart energy, manufacturing for agriculture and new materials associated with the application of energy-saving technologies and raw materials, including the semiconductor industry.

The lack of high-quality human resources is hindering the process of Vietnam’s industrialization, modernization and international integration. According to the World Economic Forum's (WEF) Readiness for the Future of Production Report 2018, Vietnam is one of the countries not prepared for Industry 4.0, ranked only 70/100 in human capital. Compared with other Southeast Asian countries in terms of human capital, Vietnam ranks lower than Malaysia, Thailand and the Philippines and only scores on par with Cambodia. One of the challenges

to developing countries in adopting Industry 4.0 is a lack of highly skilled human resources. As in the Report, Vietnam is among the lowest-rated countries, ranked 81/100, in terms of highly skilled workers. In 2019, Vietnam was ranked 93/141 globally and 7th in the ASEAN region in terms of workers' skills.

In addition, according to the rules of the labor market and general development requirements, the workers having completed VET education (either certificate I-II-III, diploma or higher diploma/college) must form the the biggest group. Yet, this is not the case in Vietnam as most of Vietnamese workers have completed higher education (with 10.9% holding undergraduate degrees or higher, 3.7% having higher diploma/college degrees, 4.3% having diploma, and 4.7% having certificate I-II-III). For every 1 person enrolled in higher education, there are only 0.42 persons in VET education, which means Vietnam has more indirect workers (holding university degrees) than direct workers (who have completed VET education). The proportion of workers completing VET education, which is already quite low, has decreased recently, while the standard ratio in many countries is 1:4:10 or 1:4:20, meaning that, for every 1 worker with a university degree or higher, there are usually 10 or 20 workers with VET diplomas. This also shows limitations in student streaming and career orientations after high school education.

Thus, despite having 5/12 pillars ranked high in the ASEAN 4, Vietnam's Skills pillar is one of the three aspects where much improvement is desired. Accordingly, to be successful in the future, workers should develop more appropriate skills to respond to changes in labor market demand. Vietnam's education and training system has been traditionally successful in providing basic skills, but now faces greater challenges in skills development, especially new and in-demand skills in the years to come.

2. Future human resource needs in Vietnam

The Resolution of the 13th Party Congress provides predictions on a number of Vietnam's macroeconomic indicators in the period 2021-2030, including:

- Period 2021-2025: The five-year average GDP growth rate is about 6.5% - 7.0%; the GDP per capita by 2025 is about USD 4,700-5,000; the proportion of manufacturing industry in GDP is over 25%; digital economy makes up about 20% of GDP; the number of digital businesses is about 70,000, employing 1.2 million digital workers; the rate of trained and certified workers is 28% - 30%; the percentage of workers in the agriculture-forestry-fisheries sector is about 25%

of total labor force; the proportion of trained workers in the labor structure of FDI enterprises increases to 70% by 2025.

- Period 2026-2030: The annual average growth of gross domestic product (GDP) is about 7%; the GDP per capita reaches about USD 7,500; the proportion of manufacturing industry in GDP is over 30%; digital economy makes up about 30% of GDP; the number of digital businesses is about 100,000, employing 1.5 million digital workers; the rate of trained and certified workers is 35-40%; the percentage of workers in the agriculture sector decreases to less than 20% of the total labor force; the proportion of trained workers in the labor structure of FDI enterprises increases to 80% by 2030.

To achieve these targets, Vietnam should invest in HR development and improvement to provide quality human resources to meet development requirements. Besides, international integration, energy transition, digital transformation and greening are creating more jobs while requiring new skills in workers to meet employment requirements. The Global Green Skills Report 2023 published by LinkedIn shows that, in all 48 surveyed countries, workers are engaged in green jobs or adding at least one green skill to their resumes. This group of workers has a 29% higher chance of finding a job than those without green skills. In this backdrop, on August 7, 2023, the Government issued Resolution No. 124/NQ-CP on the conclusions at its monthly meeting in July 2023, assigning the Ministry of Planning and Investment (MPI) to lead and coordinate with other ministries drafting a scheme on HR development for the semiconductor industry to 2030, expecting to train about 30 - 50 thousand workers and experts in the semiconductor industry.

2.1 Forecast of vocationally trained workers by level of training (persons)

Year	Workforces	Certificate I-II-III	Diploma	Higher Diploma's degree
2021	57,065,101	2,660,950	2,647,225	2,722,016
2022	57,601,762	2,804,213	2,684,411	2,985,805
2023	58,138,424	2,947,477	2,773,981	3,295,627
2024	58,675,085	3,090,740	2,863,551	3,633,368

Year	Workforces	Certificate I-II-III	Diploma	Higher Diploma's degree
2025	59,211,747	3,234,004	2,953,120	4,044,409
2026	61,895,054	3,950,322	3,037,704	4,524,692
2027	57,065,101	2,660,950	3,124,710	5,062,011
2028	57,601,762	2,804,213	3,214,208	5,663,137
2029	58,138,424	2,947,477	3,306,270	6,335,649
2030	61,975,085	3,090,740	3,400,969	7,088,023

Source: Calculations using the findings of the Labor Force Survey 2019

Assuming that, in the period 2021 - 2030, current employment and VET policies are implemented, the forecast of the labor force and labor force by level of VET education to 2030 is as follows :

- By 2025, the total workforce in the country will be 59.2 million, including 3.2 million holding certificate I-II-III, 2.95 million holding diplomas and 4.0 million having higher diploma/college degrees.

- By 2030, the total workforce in the country will be 61.9 million, including 3.1 million holding certificate I-II-III, 3.4 million holding diplomas and 7.1 million having higher diploma/college degrees. The annual average labor force growth in the period 2021-2030 is 0.9% and the annual average growth of the workforce holding certificate I-II-III, diploma and higher diploma/college degree in this period is 4.5%, 3.0% and 10.0% respectively.

2.2 Forecast of labor demand for vocationally trained workers by skill category (persons)

Year	High-level skills	Mid-level skills	Low-level skills
2021	2,001,532	4,513,215	745,727
2022	2,010,346	4,716,220	771,937

Year	High-level skills	Mid-level skills	Low-level skills
2023	2,019,161	4,919,225	798,147
2024	2,027,975	5,122,230	824,357
2025	2,036,790	5,325,236	850,567
2026	2,045,604	5,528,241	876,777
2027	2,054,419	5,731,246	902,987
2028	2,063,233	5,934,251	929,197
2029	2,072,048	6,137,256	955,407
2030	2,080,862	6,340,262	981,617

Source: Calculations using the findings of the Labor Force Survey 2019, noting that workers are classified by skill category and job position, not consistently with the level of training

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3. Orientations and solutions for developing Vietnamese human resources completing VET education in the new situation

Given the above developments, on May 4, 2023, the Party Secretariat issued Directive No. 21-CT/TW on reforms, development and quality improvement of VET education to 2030, with a vision to 2045. Accordingly, to achieve HR

development goals in line with socio-economic development requirements, a number of tasks and solutions should be implemented, including:

- *First*, promote propaganda and education to drive profound changes in awareness of the role, position and importance of VET education to 2030, with a vision to 2045.

- *Second,* improve the legal framework, mechanisms and policies to reform and develop VET education.

- *Third,* improve the effectiveness and efficiency of state management as well as assessment and accreditation of VET education.

- *Fourth,* review, rearrange and reorganize the system of VET institutions.

- *Fifth,* accelerate universal access to VET education for younger populations, unskilled workers, farmers and other general workers; with support to vocational training of policy beneficiaries and disadvantaged groups.

- *Sixth,* introduce innovative training contents, programs, methods and management practices; enhance skills assessment and certification; promote coordinated implementation of the digital ecosystem in VET education.

- *Seventh,* develop a team of VET teachers, experts, trainers and managers.

- *Eighth,* improve the effectiveness of linkage and partnerships in VET education between the Government, Institutions and Enterprises.

- *Ninth,* build resources and improve the efficiency of investment in VET education.

- *Tenth,* take proactive actions and ensure more effective international integration in VET education.

- *Finally,* research and promote technology adoption and transfer, career guidance, entrepreneurship and innovation.

In implementing these general tasks and solutions, adequate attention should be given to a number of specific activities, including:

First:

+ Propaganda, education and awareness raising on VET education should be seen as a key, cross-cutting and long-term task. It is important to drive strong change in the awareness of learners, families and communities on the significance of VET education and occupational skills in employability, income generation and lifelong learning opportunities.

+ Further review and improve mechanisms and policies to promote career guidance in high schools; enhance streaming of post-secondary students into VET education; provide both vocational and general training at VET institutions; introduce policies to encourage students with good and excellent academic performance to enroll in VET education; ensure universal access to VET education for young workers; develop mechanisms and policies to attract more learners who would be engaged in critical occupations, arduous and hazardous occupations or occupations in arts, culture, sports or health care, etc., targeting also policy beneficiaries; create favorable conditions for self-employed workers, unemployed workers or workers at risk of unemployment due to the impact of the scientific and technological revolutions, natural disasters, epidemics, etc. to participate in vocational training.

In addition:

+ Further review and improve the government functions and tasks to enhance state management of VET education at all levels; build capacity and organizational models of state agencies that are tasked to manage VET education at all levels, especially at the provincial level; strengthen effective coordination between ministries and local governments in the management and development of VET education.

+ Reorganize and build a streamlined and efficient system of public VET institutions, ensuring a rational and current scale and structure of training majors/concentrations, with curriculum standardization and stratification in place to meet HR needs of the labor market.

+ Develop support policies for vocational training, including the use of Vocational Training Vouchers; provide regulations on professional standards and conditions to ensure effective delivery of vocational training activities at enterprises. Diversify forms of training, focus on retraining and regular training of workers to create momentum in building a learning society.

+ Review and develop tools, criteria, and standards to recognize certificates and degrees workers have obtained during their employment history to increase the rate of trained and certified workers. Build the capacity of the national occupational skills assessment, recognition and certification system.

+ Develop, standardize and promptly update standards in VET education; upgrade facilities and training equipment of VET institutions; Innovate and build module- and credit-based training contents and programs in an open, flexible and

articulated manner to help achieve learning outcomes; diversify forms of training organization via enhanced IT application.

+ Improve occupational standards on teachers, focusing on practical experience and professional capacity; provide training, professional development and capacity building to managers of VET institutions and government officers tasked to manage VET education at all levels, especially at the local level.

+ Build and model linkages between VET education with businesses, cooperatives, production and business establishments and labor markets at both regional and local levels; promote forecasting of vocational training needs, especially for science - engineering - technology occupations, with priority given to IT, new technology, high tech, and future skills training. Improve mechanisms and policies to actively engage investors, businesses, and employers in VET education and development of occupational skills, focusing on occupational training at the workplace.

+ Increase the annual state budget spending on VET education in the total state budget expenditure for education and training to better reflect the critical position and role of VET education, especially in training of high-quality human resources in key and targeted occupations and sectors; prioritize budget allocation to VET education under national, sectoral and local programs and projects.

+ Expand and improve the effectiveness of comprehensive cooperation between Vietnam and other countries and international organizations in VET education; promote negotiation, signing, and implementation of cooperation agreements and programs with international partners and FDI enterprises in Vietnam to provide better support to VET institutions and students in improving their occupational skills. Form a network of international experts in VET education.

+ Strengthen scientific research and application of new technologies in VET education towards enhanced technology application and transfer with the participation of learners, teachers, experts, artisans, and employers. Promote entrepreneurship and innovation among learners and activities that support learners in starting businesses and creating jobs.