

EXECUTIVE SUMMARY

OF THE ANALYTICAL REPORT “COMPREHENSIVE ANALYSIS OF THE VOCATIONAL EDUCATION AND TRAINING SYSTEM IN ZAPORIZHZHIA OBLAST AND ITS COMPLIANCE WITH THE NEEDS OF THE REGIONAL LABOUR MARKET”



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The United Nations Recovery and Peacebuilding Programme (UN RPP)

The United Nations Recovery and Peacebuilding Programme has been addressing priority needs in eastern Ukraine since the outbreak of the armed conflict in the spring of 2014. The Programme is intended to support the Economic Recovery and Restoration of Critical Infrastructure in the conflict-affected communities, support the Local Governance and Decentralisation Reform implementation alongside with Healthcare Reform, and strengthen Community Security and Social Cohesion in the government-controlled areas of Donetsk and Luhansk oblasts and Zaporizhzhia Oblast along the Sea of Azov.

Four United Nations agencies are implementing the United Nations Recovery and Peacebuilding Programme (UN RPP):

- **the United Nations Development Programme (UNDP),**
- **the UN Entity for Gender Equality and the Empowerment of Women (UN Women),**
- **the United Nations Population Fund (UNFPA)**
- **the Food and Agriculture Organization of the United Nations (FAO).**

The United Nations Recovery and Peacebuilding Programme operates in Donetsk, Luhansk and Zaporizhzhia oblasts of Ukraine, as well as in Zhytomyr and Dnipropetrovsk oblasts, where the Rule of Law Programme works.

Ukraine Early Recovery Programme operates in Donetsk, Dnipropetrovsk, Kharkiv, Kherson, Kyiv, Luhansk, Odesa, Poltava and Zaporizhzhia oblasts.

The total budget for 2019–2022 is over 80 million US dollars.

Twelve international partners support the Programme: the European Union (EU), the European Investment Bank (EIB) and the governments of Canada, Denmark, Germany, Japan, the Netherlands, Norway, Poland, Sweden, Switzerland & the UK.

Zaporizhzhia Oblast is one of the industrial regions of Ukraine, characterized by multidirectional dynamics of development, degradation of industrial potential, and significant territorial disparities in the distribution of population and economy. In recent years, proximity to the annexed territories (Crimea), increase in the number of internally displaced persons, and escalation of Russia's aggressive policy in the water areas of the Sea of Azov have added to the already mentioned problems of the region. These features of the development of Zaporizhzhia Oblast affected the functioning of the vocational education and training (VET) system of the region. Formed in the 60-80s of the twentieth century, the network of VET institutions no longer meets the requirements of today and needs reforming. These circumstances have led to the growing interest of the international community, first of all, in the Azov region as part of Zaporizhzhia Oblast. UNDP in Ukraine within the framework of the Recovery and Peacebuilding Programme has initiated a comprehensive study of the vocational education system in Zaporizhzhia Oblast and its compliance with the needs of the regional labour market.

This analytical report was prepared using legal acts of the central and regional authorities, scientific papers on the subject, statistical data from relevant services, the results of interviews and personal visits to a number of VET institutions in Zaporizhzhia Oblast, and the results of a survey of educational process participants (students, teachers, supervisors of on-the-job training, and management) of the regional VET institutions.

ECONOMIC, POLITICAL, AND SOCIO-DEMOGRAPHIC BACKGROUND OF ZAPORIZHZHIA OBLAST VET SYSTEM FORMATION AND DEVELOPMENT

The formation and development of the VET system of Zaporizhzhia Oblast is determined by a number of factors, the main among which are the features of the economy structure, its territorial organization, the settlement system, the course of demographic processes, and the peculiarities of the labour market.

Zaporizhzhia Oblast belongs to the classic old industrial regions, the industrial core of which was formed in the 50-60's of the twentieth century. Currently Zaporizhzhia Oblast is one of the leading regions in Ukraine in terms of economic development. In terms of overall gross regional product (GRP), the region ranks ninth in Ukraine and fifth per capita. The economy of the region is based on the real sector of the economy, which accounts for 55.6% share in the gross value added and for 66% in the volume of sold output. Industry is the leader in the real economy (almost 60%). In terms of industrial production, the region ranks third in Ukraine after Dnipropetrovsk and Donetsk oblasts. Zaporizhzhia Oblast accounts for 8.7% of the national industrial output, 100% of ferrosilicon production, almost 82% of tractor mowers, 80.4% of transformers with a capacity not exceeding 1kVA, and 29.3% of electricity.

The industrial production structure of Zaporizhzhia Oblast is similar to the Donbass and Dnieper regions. Metallurgical production (40.4%), production and supply of electricity, gas, steam and air conditioning (21.4%), and machinery (12.8%) take the first place in the volume of sold industrial output. Despite the significant decrease in the share of machinery in recent years, the industry of Zaporizhzhia Oblast has a large share of high-tech products compared to similar old industrial regions. This fact causes region's higher workers demand for these types of economic activities.

Zaporizhzhia Oblast is characterized by large disparities in the concentration of industrial production. More than 92% of Zaporizhzhia regional industrial production is currently concentrated in five cities of regional subordination. At the same time, the region's administrative centre accounts for almost 3/4 of the sold industrial output; Enerhodar city, for 13.6%. The cities and districts of the Azov region account for only 4.6% of the sold industrial output of Zaporizhzhia Oblast, which does not correspond to the percentage of population concentration in them.

The peculiarities of the industry structure, in particular the dominance of large enterprises of metallurgy, machinery, energy, chemical industry, led, on the one hand, to the establishing of a significant number of VET institutions, on the other, to the areas of

economic activity and occupations for which workers training is carried out in the region.

Tourism and recreation activity is of great importance for Zaporizhzhia Oblast, especially for the Azov region. Having access to the coast of the Sea of Azov, possessing considerable tourism and recreation potential, the Azov region has every reason to successfully develop this type of economic activity. This fact is important because the objects of tourism and recreation activities (sanatoriums, recreation centres, hotels, catering establishments, etc.) are significant "consumers" of VET graduates.

Zaporizhzhia Oblast is characterized by moderate population decline and average level of demographic situation complexity. On 01.01.2020, 1687.4 thousand people lived in the region, which is about 4% of the population of Ukraine. In the post-Soviet period, the region's population decreased by 18.5%. The main reason for population decline is the unfavourable course of demographic processes, in particular, the prevalence of deaths over births. The birth rate in Zaporizhzhia Oblast is lower and the mortality rate is, on the contrary, higher than the national average level. Due to unfavourable demographic processes, peripheral districts of the oblast (Rozivka, Novomykhailivka, Bil'mak, Tokmak, and Pryazovske), as well as the cities where the industry degraded, lose population most intensively. Despite the high level of urbanization, Zaporizhzhia Oblast is characterized by a small network of urban settlements and significant territorial disparities in population distribution. Almost 60% of the total and 76% of the urban population of the oblast live in Zaporizhzhia, Melitopol and Berdyansk; 1/3 of population – in the Azov region. The location of the administrative centre in the far northwest of the region impedes its accessibility to the population.

The branched chain of secondary education institutions, institutions of vocational pre-higher and higher education has been formed in Zaporizhzhia Oblast. The dynamics of the number of pupils, graduates of secondary education, in recent years gives grounds for some optimism. Due to the growth of birth rates in the early 21st century, the increase in school enrolment during 2014-2019 was about 8.5%. This may lead to the increase in the number of VET students in the next years.

Colleges and technical schools belong to vocational pre-higher education institutions. Currently, there are more than 30 such institutions operating in the region, most of which are structural units of higher education establishments. They are competitors for VET institutions to some extent, as they also train workers.

The number of higher education institutions remains almost unchanged. In 2018-2019, 62.4 thousand students studied there, and 4.5 thousand teachers provided educational services.

Regional and local labour markets are important factors influencing the formation of VET students contingent, a network of vocational education institutions, areas and occupations of workers training.

The total number of economically active population in Zaporizhzhia Oblast in 2018 made up 812.6 thousand people. The employed population account for the lion's share in its structure, 90.1%. During 2013-2019, there was a steady decline in the number of economically active and employed population, caused by the deterioration of the population age structure and the migration outflow of citizens abroad.

The employment structure of the population is a reflection of the specifics of the region's economic development and a significant factor influencing the formation of labour demand. It has not changed significantly in recent years. Currently, 57.2% of the economically active population is employed in the service sector, 42.8% in the real economy. The main sectors, where people work, are industry (22.4%), wholesale and retail trade (21.7%), agriculture, forestry and fisheries (16.4%), and education (7.3%). The number and structure of employees is quite different from the above data. Thus, the share of employees working in industry is 34.5%, in education 12.4%. Seasonal and informal employment of the population is rather widespread in such types of economic activity as wholesale and retail trade, agriculture.

Among the labour market indicators, the size and structure of unemployment in the region have great impact on the development of vocational education. The share of the unemployed in Zaporizhzhia Oblast is about 10% and slightly exceeds the national average indicator. The most difficult situation in the labour market is in the city of Tokmak and Tokmak, Bil'mak, Pryazovske, Prymorsk districts.

Internally displaced persons, the number of whom exceeds 55,000 persons in the region, add pressure to the labour market. One in five displaced persons live in Berdyansk, exacerbating problems in local labour markets. The largest number of registered unemployed persons out of the total is concentrated in agriculture (31.1%), industry (16.4%), wholesale and retail trade (13.5%), and public administration and defence (11.6%). Among the occupational groups, the highest unemployment rates are for "Technological equipment maintenance, operation and control, equipment and machinery assembly workers" (18.6%) and "Trade and services workers" (17.4%).

The youth unemployment is an acute problem for Zaporizhzhia Oblast. The situation has improved over the last two or three years; however, as of December 2019, the share of the unemployed under the age of 35 was 30%. Unresolved issue of youth employment is one of the factors affecting the development of the VET system in the region. In the unemployment structure of Zaporizhzhia Oblast, persons with vocational and technical education are predominant - 47.2%. In general, this situation differs from the national one, where the share of the unemployed with vocational and technical education is about 30%.

The ratio between the number of registered unemployed persons and the number of job vacancies is an important indicator of the labour market. The analysis of these indicators shows that the situation in the labour market of Zaporizhzhia Oblast is gradually improving. In 2019, the number of jobseekers per vacancy was 15 people, which is better than the years 2014-2015, but worse than the national average. The sectoral differences in the number of jobseekers per vacancy by the end of 2019 were quite significant - from 93 persons in agriculture to six persons in industry.

Along with sectoral, there are also significant differences in the number of vacancies and jobseekers per vacancy across local labour markets. The most difficult situation with these indicators is in Berdyansk City, Prymorsk District, and Tokmak City and District employment centres.

According to the employment centre, the leaders in the number of job vacancies are such occupations as "Seller of goods, sales-consultant", "Handyman", "Tractor-driver of agricultural production", "Vehicle driver" and "Hospital nurse". It should be noted that the list of occupations with the greatest personnel shortage includes those in which training is conducted in the regional VET institutions - electric welder, breakdown mechanic, vehicle driver, electrician, etc.

Employment Centres of Zaporizhzhia Oblast are trying to resolve the unemployment problem. Nevertheless, the region's labour market remains unbalanced. On the one hand, the unemployment rate is almost 10%, on the other hand, the region suffers from a significant personnel shortage in vocational occupations. The labour migration of Ukrainians, as well as a considerable number of informally employed population (154.6 thousand persons) aggravate the situation in the labour market.

THE SYSTEM OF VOCATIONAL EDUCATION AND TRAINING OF ZAPORIZHZHIA OBLAST

The modern VET system of Zaporizhzhia Oblast has a branched network of vocational and technical institutions. At the end of 2019, there were 35 VET institutions in the region, including 29 classical institutions of vocational education, Berdyansk Economics and Humanities College of Berdyansk State Pedagogical University, and five institutions of the State Penitentiary Service of Ukraine (Table 1). Since

the decision to terminate the activity of the state-owned Vilniansk Vocational Lyceum was taken at the end of 2019, it is regarded as an independent educational institution in this research. Meanwhile, the VET institutions of the penitentiary service were not analysed. Six VET institutions are higher vocational schools, 16 are vocational lyceums, seven are centres of vocational and technical education.

Table 1. Activity of VET Institutions of Zaporizhzhia Oblast*

Year	Number of institutions at the end of the year, units	Number of students, thousand/persons	Enrolled students, thousand/persons	Number of qualified graduates, thousand/persons
2000	42	23 863
2005	44	23 930	16 352	15 272
2010	46	19 042	12 917	10 867
2013	47	17 558	11 901	10 815
2014	47	15 978	9 660	10 259
2015	47	15 214	8 687	8 387
2017	41	13 580	7 763	6 533
2018	35	13 230	6 296	6 034
2019	35	13 431	5 767	5 278

* - including VET institutions of the State Penitentiary Service of Ukraine

In addition, Special Purpose Emergency and Rescue Unit of the Main Department of the State Emergency Service of Ukraine in Zaporizhzhia Oblast, Zaporizhzhia Basic Professional Training Centre "Police Academy", municipal enterprise Zaporizhzhia Regional Labour Protection Centre and others have licenses for workers training for various types of economic activity.

The peculiarities of the VET institutions placement are determined by the population size of the urban settlements. The largest number is concentrated in Zaporizhzhia - 12 institutions (40% of the total). There are three VET institutions both in Melitopol and Berdyansk (including Economics and Humanities College). In general, 1/3 of VET institutions of Zaporizhzhia Oblast are concentrated in the Azov region. The average availability of VET institutions in the region is 30 km.

The decrease in the number of VET institutions, the decline in the prestige of vocational education, and the fall in the number of secondary school graduates caused a decrease in the number of the VET

institutions students in the region by 23.5% in 2013-2019. The fall of the number of enrolled applicants (by 51.5%), as well as graduates of the vocational education system (by 51.2%) is going on in parallel with the drop of the number of VET students. As the rate of decline in the number of students and the VET institutions network does not correspond, this leads to a decrease in the number of students in one institution. While the average number of students in one VET institution was 414 persons in 2010, it was 383 persons in 2019. However, there was no sharp decrease in the number of students, and in some VET institutions it even increased due to the merger. The reason for this situation is responsible attitude of the regional authorities to the process of the VET institutions network optimization.

Two types of VET institutions by production and educational specialization prevail in Zaporizhzhia Oblast - agrarian and comprehensive, the share of which is 20% and 46.7% respectively. The situation is similar in the Azov region with 40% share of agrarian and 50% of comprehensive institutions. However,

such a division is relatively conditional, since in recent years, the VET institutions have begun to train workers not only for those occupations that are mentioned in their names. For example, the state-owned Zaporizhzhia Vocational Trade and Culinary Lyceum train workers for the occupation "House painter" and "Plasterboard installer", and the state-owned Zaporizhzhia Construction Centre for Technical and Vocational Education, for the occupation "Cook. Baker". This situation reflects the desire of VET institutions to "survive" under the difficult conditions of market economy.

Workers training in the VET institutions of Zaporizhzhia Oblast is carried out in 17 major types of economic activity which consolidate nearly 140 occupations, including 11 areas and 45 occupations in the Azov region. Their list was formed under the influence of the structure specifics of the region's economy both in Soviet times and in a market economy. Each area of economic activity includes different number of occupations. Thus, "Agriculture" area includes eleven occupations (tractor-driver of agricultural production, mechanic for agricultural machinery and equipment, etc.); "General occupations of electrical engineering production", 29 occupations (electric and gas welder, gas cutter, electrical equipment maintenance technician, etc.). VET institutions of Zaporizhzhia Oblast are licensed to train personnel for 13 occupations out of 25 occupations of national importance, but the training is in fact carried out only for eight.

The analysis has showed that personnel training in such areas of economic activity as "Public catering" (18 VET institutions), "Occupations common to all sectors of the economy" (18 institutions), "General occupations for electrical machinery" (15 institutions) and "Motor transport" (14 institutions) is the most widespread in the VET institutions. However, personnel training in the field of production and repair of aircraft, engines and equipment, production of artistic items and jewellery is carried out only in one or two VET institutions.

Similar disparities can be observed in the distribution of vocational occupations. In order to increase the opportunities for graduates employment, almost all VET institutions of Zaporizhzhia Oblast combine usually two or even three vocational occupations. An example of such an integration is the "Tractor-driver of agricultural (forestry) production; mechanic for agricultural machinery and equipment; category "C" vehicle driver", "Waiter; bartender; buffet attendant" and others. Personnel training for such integrated occupations is carried out in different number of VET institutions of Zaporizhzhia Oblast. Thus, personnel training for the occupation "Cook. Pastry chef" is carried out by 17 VET institutions of the region; "Wheeled vehicle maintenance technicians. Motor vehicle driver of "B" and "C" categories", 12 institutions. However, mining industry personnel for the occupations "Electric locomotive operator; equipment repair technician on duty" and "Electric and gas welder; reactor-turbine equipment repair technician" is trained only at the state-owned Dniprorudne Vocational Lyceum. As for the VET institutions located in the Azov region, the largest number of them are licensed to train for such vocational occupations as "Cook. Pastry chef" – eight institutions; "Wheeled vehicle maintenance

technicians. Motor vehicles driver of "B" and "C" categories", seven institutions; "Hairdresser (hairdresser-designer)" – five institutions.

Likewise, these features of vocational personnel training are observed in the context of settlements. In general, VET institutions are located in 15 settlements of the region, two of them are in rural settlements (Osypenko and Fedorivka). In addition, the Fedorivka Centre for Vocational Education has branches in Bilmak, Huliaipole and, since recently, in Vilniansk. The state-owned Multidisciplinary Centre for Technical and Vocational Education (Molochansk city) has a branch in Tokmak. The analysis has showed that the real graduation of students in such areas of economic activity as "Public catering" in 2018-2019 took place in 13 settlements; "Agriculture", "Occupations common to all sectors of the economy", in 10 settlements; "General occupations of electrical engineering production", in eight settlements. However, workers training for metallurgical production is carried out only in Zaporizhzhia; for the mining industry, in Dniprorudne city. These differences also exist regarding occupations. Thus, personnel training for the occupation "Cook. Pastry chef" is carried out in 13 settlements; "Motor vehicle driver", in ten settlements; "Engine mechanic", "Sailor", "Ship's cook", only in Zaporizhzhia.

The discrepancy between the number of VET institutions and the number of settlements where people can receive vocational training indicates that there is duplication of training for the same occupations in different educational institutions of the same city. This applies to the most popular occupations. For example, the training of cooks/pastry chefs in Zaporizhzhia is carried out by the state-owned Zaporizhzhia Centre for Vocational Education of Water Transport, the state-owned Zaporizhzhia Polytechnic Centre for Technical and Vocational Education, the state-owned Zaporizhzhia Construction Centre for Technical and Vocational Education, and the state-owned Zaporizhzhia Vocational Trade and Culinary Lyceum. Nine of the 12 VET institutions in Zaporizhzhia prepare electric and gas welders in various combinations with other occupations. In Berdyansk, electric and gas welders are trained at the state-owned Berdyansk Vocational Machinery Lyceum and the state-owned Berdyansk Centre for Technical and Vocational Education. However, duplication of personnel training in Zaporizhzhia Oblast is not widespread.

The analysis of the number and dynamics of VET institutions graduates in Zaporizhzhia Oblast indicates certain trends that have been formed recently under the influence of the labour market and economic development of the region. The calculations have showed that the largest number of skilled personnel graduate in such areas of the economy as "General occupations of electrical engineering production", "Public catering", "Occupations common to all sectors of the economy", "Agriculture" and "Road transport". They account for 68% of the region's total graduates. The VET institutions of the Azov region have a similar situation. The five areas of economic activity mentioned above account for nearly 70% of graduates. The following occupations were leading in terms of the number of graduates in 2018-2019: "Cook. Pastry chef" (almost 700 persons), "Electric and gas weld-

er. Gas welder" (416 persons), "Tractor-driver of agricultural production. Mechanic on vehicles repair" (334 persons), "Computer typesetter" (267 persons), "Hairdresser (hairdresser-designer)" (247 persons), "House painter. Plastering" (219 persons).

The number of graduates is multidirectional for different types of economic activity. Such types of activity as "Railway transport" (47.8%), "Construction, installation and repair works" (43.9%), and "General occupations of electrical engineering production" (28.3%) underwent the largest reduction. Changes in the structure of graduates in recent years are caused by the specifics of the region's economy transformation, the preferences of modern youth, the growth of labour migration, and so on.

The regional distribution of VET graduates depends on the population of the settlements and the number of VET institutions located there. Obviously, the largest number of graduates is concentrated in Zaporizhzhia (about 2150 persons), Melitopol (640 persons), Berdyansk (330 persons) and Dniprorudne (150 persons). These cities account for almost 78% of the total number of VET institutions graduates in the region. The number VET graduates in the Azov Region is about 1200 (29.2%), which corresponds to the proportion of VET institutions located in the region. In some VET institutions the number of graduates is very low. These are such institutions of the Azov region as the state-owned Osypenko Vocational Agrarian Lyceum (36 people), the state-owned Yakymivka Vocational Agrarian Lyceum (36 persons) and the state-owned Prymorsk Vocational Agrarian Lyceum (18 persons). This number of graduates and their dynamics call for the question of the necessity to continue functioning of these institutions.

In addition to the training, VET institutions also carry out retraining, re-education and advanced training of workers. In 2018-2019, 21 VET institutions in Zaporizhzhia Oblast, as well as some educational centres not subordinated to the Ministry of Education and Science of Ukraine provided these types of educational services. In total, re-education, advanced training and other types of retraining cover 13 areas of economic activity and nearly 50 vocational occupations. Retraining prevails (over 57%) in the structure of different forms of obtaining new knowledge.

Zaporizhzhia Regional State Administration has been making a lot of efforts to reform the VET system of the region in the recent years. In a concentrated form, they are outlined in the Programme for the development of education in Zaporizhzhia Oblast for 2018-2020 and Regional plan for the development of vocational and technical education for 2019-2021 (order of the Head of Zaporizhzhia Regional State Administration № 125 of March 15, 2019). They include a range of measures to reform the VET system in the region: from analysis of the regional labour market, adjustment of the state order for personnel training to optimization of the VET institutions network.

The introduction of elements of dual education takes an important place among these measures. Since 2017-2018, dual education has been introduced in 17 VET institutions of Zaporizhzhia Oblast and covers almost 40 occupations. The state-owned Dniprorudne Vocational Lyceum (11 occupations) is leading among the VET institutions on its implemen-

tation. In the Azov region dual education has been introduced at the state-owned Melitopol Multidisciplinary Centre for Technical and Vocational Education, the state-owned Melitopol Higher Vocational School and the state-owned Berdyansk Vocational Machinery Lyceum.

The establishment of training and practical centres began in 2018. Currently, there are six training and practical centres operating in the region, which are established exclusively in the VET institutions of the administrative centre (the state-owned Zaporizhzhia Higher Vocational Machinery School, the state-owned Zaporizhzhia Polytechnic Centre for Technical and Vocational Education, the state-owned Zaporizhzhia Higher Vocational School "Engine builder", the state-owned Zaporizhzhia Higher Vocational School of Fashion and Style, and the state-owned Zaporizhzhia Construction Centre for Technical and Vocational Education).

According to the competition announced by the Ministry of Education and Science of Ukraine, Zaporizhzhia Oblast has been selected as one of the regions for the creation of centres of excellence. Now the process of applicants assessment, the state-owned Zaporizhzhia Polytechnic Centre for Technical and Vocational Education, the state-owned Melitopol Higher Vocational School, and the state-owned Berdyansk Centre for Technical and Vocational Education on the basis of which such centres can be established, is ongoing.

The evaluation of the financial performance of VET institutions is an important element of the VET system analysis. The relevance of such an evaluation has significantly increased for the regional authorities, since the VET system is mostly financed from the regional budget. In general, the financial resources allocated annually to VET system are growing. In 2015-2019, the total cost of the VET institutions of Zaporizhzhia Oblast increased from UAH 239.1 to UAH 554.1 million. Since the dynamics of the number of VET students and cost do not coincide, this led to the growth of financial expenses per capita by 58% - from UAH 27.8 thousand in 2015 to almost 44 thousand in 2019. The minimum values of financial expenses to train one VET students belong to Zaporizhzhia Vocational Trade and Culinary Lyceum (UAH 20.9 thousand) and Zaporizhzhia Vocational Motor Transport Lyceum (UAH 25.5 thousand); maximum, to Osypenko Vocational Agrarian Lyceum (almost UAH 120 thousand) and Vasylivka Vocational Lyceum (UAH 104 thousand). However, there is no absolute dependence between the cost per one student and the number of students in VET institution.

In the structure of educational expenses, almost 2/3 of them are salaries. Utility financing is maintained at 9-12%. The repair and the material and technical resources costs are the lowest. In recent years, their volumes have remained almost unchanged, despite numerous discussions at the state level of the need to modernize the material and technical resources and equipment of the VET institutions.

There are significant disparities in the cost of personnel training even for the same occupations due to the unequal number of VET students, technical characteristics of premises, condition and cost of equipment, tools in the VET institutions. Thus, the financial cost of

workers training for the occupation "Cook. Pastry Chef" is UAH 20.9 thousand at the state-owned Zaporizhzhia Vocational Trade and Culinary Lyceum and UAH 72.7 thousand in Fedorivka Centre for Vocational Education.

An important performance indicator of the vocational education system is the compliance of the areas of personnel training and the number of graduates with the needs of the regional labour market. Although the information provided by the employment centre on the available job vacancies is rather multidirectional, it indicates an imbalance between the region's workforce needs and training areas, the number of VET institutions graduates. Thus, according to Zaporizhzhia Regional Employment Centre, at the end of 2019, the largest number of job vacancies were for such vocational occupations as seller of food products (49 vacancies), vehicle driver (46 vacancies), electrical equipment maintenance technician (37 vacancies), and electric and gas welder (29 jobs). However, with all the job vacancies available for these occupations, there are a lot of unemployed workers with the relevant qualifications. For example, there are 969 unemployed drivers for 46 job vacancies of vehicle driver, and 582 unemployed salespersons for 49 vacancies of a food products seller. A similar situation is observed in the Azov region. Thus, as of the end of 2019, there were only five cook vacancies at the Berdyansk City and District Employment Centre with 75 unemployed cooks registered, and the number of VET institutions graduates of the city and district in this occupation was 88 people.

The results of the employers' survey on the workforce demand look more optimistic. Thus, in 2019, the approximate need for workers was estimated at 45.6 thousand people, for 2020, 50 thousand people. Such occupations as public transport conductor, emergency recovery work technician, breakdown mechanic, electrical equipment maintenance technician, vehicle driver, tractor-driver of agricultural production will have the largest number of job vacancies. However, there is almost no demand for locomotive operators, hairdressers-designers, seamstresses, computer typesetters, sellers of food and non-food products, etc. A similar situation is observed in the Azov region. According to the results of the employers survey, specialists in such occupations as tractor-driver of agricultural production (more than 350 vacancies) and vehicle driver (almost 210 vacancies) will be most needed. The demand for technicians, machine tool operator, turners, as well as catering workers (cooks) is quite insignificant, despite the considerable number of health resorts and tourist establishments.

The distribution of job vacancies across cities and enterprises indicates that, first, most vacancies are provided by the sector of real economy; second, the bulk of vacancies are offered either by powerful industrial enterprises or by a large number of agricultural companies/farms; third, the lion's share of individual vacancies belongs to two or three enterprises

which are not always cost effective. However, the information on the number of job vacancies is not quite objective. The Zaporizhzhia Regional Employment Centre surveys predominantly huge business entities, while small and medium-sized businesses remain out of focus, although they employ a large number of graduates of such occupations as "Cook. Pastry chef", "Hairdresser-designer", "House painter-plaster", and others. Much of the population is also employed in the informal sector.

A comparative analysis of the number and structure of job vacancies as of 2019 and 2020 and the number of VET institutions graduates enables to determine approximately the relevance of the educational activities to the needs of the labour market. There is an obvious imbalance in most cases. In such economic activities as "Railway transport", "Construction, installation and repair works", "Public catering", "Service sector", and "Trade and commercial activity", the number of graduates significantly exceeds the number of expected job vacancies. For example, in 2019 more than 740 students of the occupation "Public catering" graduated from the VET institutions in Zaporizhzhia Oblast, and currently almost 2675 persons study this occupation. However, the demand of employers for personnel of this occupation for 2020 is only 87 persons. The opposite situation is in motor vehicles and agriculture where the number of vacancies is significantly higher than the number of graduates. Similar inconsistencies are also observed at the level of individual occupations.

Zaporizhzhia Oblast has a considerable number of VET institutions which differ a lot in terms of development. The rankings of the regional VET institutions were determined to evaluate the prospects of their further activity, to establish training and practical centres, centres of excellence on their basis. The rankings were performed separately for agrarian and non-agrarian vocational institutions. The informational basis for the ranking was the official performance indicators of the VET institutions, including the number of VET students, the number of first-year enrollees, the number of graduates, the proportion of unemployed graduates, the dynamics of the number of students and graduates, and so on. The number of people who finished retraining or advanced training and the financial costs of preparing one student were also considered. Among the agrarian VET institutions the state-owned Melitopol Vocational Agrarian Lyceum took the leading place in the ranking, while the state-owned Osypenko Vocational Agrarian Lyceum was the last. The state-owned Zaporizhzhia Higher Vocational Machinery School and the state-owned Zaporizhzhia Higher Vocational School of Fashion and Style are leading in the ranking of non-agrarian VET institutions of the region. The last places in the ranking of non-agrarian institutions were held by the state-owned Vasylivka Vocational Lyceum and the state-owned Zaporizhzhia Construction Centre for Technical and Vocational Education.

Comprehensive analysis of the vocational education system of Zaporizhzhia Oblast, visits to seven VET institutions of the Azov region, interviews with their heads, survey of students, teachers and supervisors of on-the-job training, discussions of the key problems of the vocational education system development with the heads of the Department of education and science of Zaporizhzhia Regional State Administration and the scientific and methodological centre for vocational education in the region became the basis for identifying major problems in its development.

1. Obsolescence of the material and technical resources which impede the provision of quality workers training considering modern requirements.

The vast majority of VET institutions of the region has equipment from the Soviet period that is almost out-of-use at the production. The exception is the equipment and tools of training and practical centres. The situation is especially difficult in the peripheral VET institutions which provide personnel training for agriculture, road transport, clothing manufacture, and others. Almost 20% of VET students and teachers/supervisors of on-the-job training who participated in the survey gave the lowest mark to the material and technical resources of their institutions (5-6 and less points out of 10).

2. Reduction of the number of VET students.

The situation with the falling number of VET students is typical for Ukraine. The main reasons for it in Zaporizhzhia Oblast are the deterioration of demographic situation in the late 90's of the 20th century and at the beginning of the 21st century, the decline of the vocational education prestige, the transformation of the economy's structure of the region, including closure of some huge enterprises, problems of graduates employment, low salaries, etc. Almost every fourth vocational education institution of the region has a contingent of VET students that does not meet certain criteria.

3. Unresolved issue of employment and salaries for students during their apprenticeship.

11% of those graduates who have signed an agreement with enterprises (companies, firms) remain unemployed. Small and medium-sized enterprises, farms do not officially pay salaries to the VET students during their apprenticeship.

4. Imbalance between the needs of the labour market and the educational services market, which leads to the redundancy of skilled workers of certain occupations and the shortage of others in the labour market. According to the analysis of job vacancies, there is practically no demand for cooks, computer typesetters, who are trained in many VET institutions, in the official labour market. However, there is personnel shortage in such occupations as vehicle driver, tractor-driver of agricultural production. The problem is that there is currently no objective system to define the needs of the regional labour market.

5. Need to strengthen and renew the VET system management.

The heads of some VET institutions in Zaporizhzhia Oblast are of retirement age. On the one hand, they have rich experience in the vocational education system, on the other hand, this experience was formed in Soviet or early post-Soviet times. It causes the inability to work in the current conditions, the desire to preserve in fact the Soviet system of workers training, weak reaction to educational innovations, paternalistic attitudes.

6. Absence of proper conditions for the education, accommodation and recreation of the VET institutions students. A number of educational premises, workshops, and dormitories require repair, insulation, replacement of windows, etc. In recent years, there have been positive changes, in particular, repair of dormitory rooms, kitchens, showers, installation of modern washing machines, and so on. However, almost 17% of VET students answering the question "What do you dislike about your VET institution?" mentioned unsuitable premises and cold classrooms and workshops.

7. Imbalance of the system of workers training of the same occupations in several vocational institutions of one city and violation of their specialization.

The duplication of workers training for such occupations as "Wheeled vehicle maintenance technician", "Electric and gas welder", "Electrical equipment maintenance technician", "Cook. Pastry chef" is most often. The violation of the educational specialization happens when VET institutions carry out workers training for the occupations that do not correspond their profile.

8. Lack of proper communication and cooperation between VET institution, entrepreneurs, heads of large enterprises, and local self-government bodies.

Formed in Soviet times, the practice of supporting VET institutions by large state-owned enterprises is lost in most cases. Private businesses and even state-owned enterprises have become much more economical in financial resources usage in the market environment. Cooperation with employers remains a problem. Despite the personnel shortage, employers do not participate properly in the educational process.

9. Insufficient level of funding, deficiencies in the legal framework, unresolved issues of transferring ownership of educational institutions' property. Currently, funding of the VET institutions is provided mainly from the regional budget. However, teachers, supervisors of on-the-job training and heads of the VET institutions complain about the lack of financial resources. The problem of transferring VET institutions' property to the balance of the regional council remains unsolved. This partially hinders the VET institutions modernization, limiting the possibility to attract additional financial resources.

10. Outdated content, structure and methods of personnel training, complication of the licensing procedure for new occupations. Despite the emergence of new professional standards developed on a competency basis, the methodology of conducting classes and production practice have hardly changed in the VET institutions. The reasons for this are outdated material and technical resources, equipment, tools, as well as the age of supervisors of on-the-job training. The licensing process is complicated and constantly changing, which brings about additional problems for the emergence of new occupations. The issue of changing the timetable of the educational process for certain occupations still remains unresolved. For such occupations as cooks, builders, tractor-drivers, it is most effective to have apprenticeship in the summer period. This problem is especially acute in the VET institutions of the Azov region where a lot of students get seasonal work in summer.

11. Decline in the prestige of vocational education, which is observed in many regions of Ukraine, the deterioration of the VET students' skills quality. In recent years, an unattractive image of the VET institutions has been formed in society. It is considered that only students with low levels of education and those who could not enter any pre-higher or higher educational establishments study at the VET institutions. Unattractive external look of VET institutions, outdated material and technical resources, specific norms of behaviour discourage young people from entering the vocational institution. This is evidenced by the results of the VET students survey. When asked "Why are young people not willing to enter VET institutions?", almost 58% of students mentioned a low prestige of vocational education, another 34.4% said that vocational education and its institutions had a negative "image".

WAYS TO REFORM THE VET SYSTEM OF THE REGION

The general system of measures to reform the vocational education of the region was elaborated on the basis of the analysis of economic and socio-demographic background of the regional development, the labour market, the existing VET system, the network of its institutions, the areas of personnel training, the orders of central and regional authorities. In general, the system of measures includes mechanisms at both national and regional levels.

Among the measures at the national level, there is a need for adoption of the Law of Ukraine "On vocational (vocational and technical) education", harmonization of its provisions with the recently adopted Law of Ukraine "On professional pre-higher education", normalization of provisions that will enable the process of transferring VET institutions' property from national to regional ownership. It is also necessary to intensify the process of new vocational and educational standards approval, to improve the procedure for competitive selection of the VET institutions to create training and practical centres there, to develop and officially approve the criteria for the VET institutions network optimization, to determine the estimated cost of personnel training for different occupations, to create conditions for the development of public-private partnership in the VET system.

At the regional level the most important tasks for the VET system reforming are:

- 1. To improve the approaches to the formation of a regional order to ensure compliance of the real needs of Zaporizhzhia regional labour market for certain occupations with the areas of training in the region's VET institutions.** To perform this task, it is necessary to reform the system for collecting information on the available job vacancies by conducting survey of not only large enterprises but also small and medium-sized businesses or their business associations. This will allow to avoid the unnecessary cost on personnel training for those occupations that are not in demand in the labour market of the region.
- 2. To reform the system of graduates employment, first of all, by conducting agreements with enterprises with a guarantee of employment.** Solving this issue is important both to ensure the proper functioning of the VET institutions and to create a positive image of vocational education. Nearly 41% of VET students who participated in the survey believe that job security is an important mechanism for increasing the attractiveness of vocational education.
- 3. To develop a public-private partnership system, including encouragement of employers to participate in the workers training.** It is important to involve in this process not only large enterprises, but also representatives of small and medium-sized businesses, small companies, possibly NGOs and business associations. At the regional level, within the framework of socially responsible business, it is necessary to develop a system of preferences for SMEs on the employment and remuneration of the VET students.
- 4. To expand the list of VET institutions and occupations for introducing dual education.** It is important to involve small and medium-sized businesses in this process. Dual education should be in line with the best European practices, not limited to the apprenticeship at the enterprise.
- 5. To optimize the areas of education and the list of occupations for which the personnel training is carried out in the VET system of the region.** This will avoid duplication of the same occupations in the VET institutions of one city, ensure the compliance of the educational profile of the institution with the list of occupations of personnel training. The need for such measures is indicated in the survey by 53% of the heads of VET institutions.

6. To create the conditions to employ young supervisors of on-the-job training, who know how to work with the modern equipment, in the VET institutions. They can provide new quality of education making practical training more interesting and attractive for vocational education students. It can be proved by the activity of supervisor of on-the-job training Shaposhnikov O.M. at the state-owned Berdyansk Vocational Machinery Lyceum.

7. To modernize the educational environment which includes updating of the material and technical resources, repair of educational premises, workshops, dormitories, and others. The main problem with this task is to find new sources of funding, since the VET institutions modernization requires considerable investment. Surveys of the VET institutions of the region defined that educational environment reform needs about UAH 1.18 billion. The structure of expected expenditures indicates that the repair of educational premises, workshops, and dormitories is more important at this stage of development than the modernization of the material and technical resources.

8. To update the contents, forms and methods of personnel training. Formed over the years, the practice of personnel training in the VET institutions has not much changed in the post-Soviet period and does not meet the requirements of today. First, production technologies and equipment currently used by business entities have changed significantly; second, conceptual approaches to training have changed, in particular, the transition to competency-based education continues; third, due to rapid changes in technologies, the need for lifelong learning is growing; fourth, the preferences of secondary schools graduates transform, which is manifested in the choice of certain occupations for education. Almost 42% of the VET institutions heads consider that updating curricula, programmes and methodologies is one of the most important ways of reforming the region's vocational education system.

9. To expand and update the list of occupations for personnel training in the VET institutions. These are the occupations that meet the requirements of high-tech manufacturing, occupations for which training is not carried out now, but which will be relevant in the near future. In teachers' and supervisors' of on-the-job training opinion, these occupations are: web-design and programming, clothing designer, landscape designer, hotel and tourist business manager, facade installation and insulation, sommelier, steward, high-speed electric train operator, drone operator, embroiderer, sushi-chef, pizza maker, 3D structures specialist, creator of advertising content, technician of the fashion industry, device-master, specialist of "green" energy objects maintenance.

10. To create conditions for fulfilling the order of the Cabinet of Ministers of Ukraine "On the procedure for the organization of inclusive training for people with special educational needs in vocational and technical education institutions". An acute issue is also to organize work with children with different developmental disabilities and to create career development centres.

11. To create multidisciplinary centres for vocational education, training and practical centres and centres of excellence. According to the order of Zaporizhzhia Regional State Administration, it is planned to transform the state-owned Dniprorudne Vocational Lyceum and Zaporizhzhia Vocational Trade and Culinary Lyceum into multidisciplinary centres. It is advisable to set up training and practical centres on the basis of the Melitopol Multidisciplinary Centre for Technical and Vocational Education for the occupations of railway transport, on the basis of the Berdyansk Centre for Technical and Vocational Education for the occupations "Electric and gas welder. Electric welder of automatic and semiautomatic machines", on the basis of Dniprorudne Vocational Lyceum for occupations of the mining industry, on the basis of Mykhailivka Higher Vocational School for occupations "Tractor-driver of agricultural production. Motor vehicle driver of "B" and "C" categories".

12. To activate training and retraining of the adult population. This is a relatively new area of activity that requires changing approaches to learning, developing new curricula designed for different periods of education (three, six months or one year). The introduction of flexible training schedules for adults will allow institutions to increase the number of VET students, financial revenues from educational activities, and intensify work with employers.

13. To diversify forms of career guidance, measures to enhance the prestige of vocational education. The promotion and formation of a positive image of the VET system is one of the key tasks of its reform. The forms of career guidance also need updating, as the struggle for potential students is very fierce. This is a complicated task that requires out-of-the-box solutions in this field.

WAYS TO OPTIMIZE THE VET INSTITUTIONS NETWORK AND AREAS OF WORKERS TRAINING IN ZAPORIZHZHIA OBLAST

Among the measures of reforming the vocational education system of Zaporizhzhia Oblast, the process of the region's VET institutions network optimization is the most problematic. Such optimization affects the social interests of a large number of people, teachers, supervisors of on-the-job training, supporting personnel, which causes the complexity of its implementation.

The position of the Department of education and science on this issue is set out in the Programme (plan) for the development of vocational and technical education of Zaporizhzhia Oblast for 2019-2021, approved by the order of the Head of Zaporizhzhia Regional State Administration № 125 of 15.03.2019. The plan provides for the regulation of the VET institutions network by merging five of them with more powerful vocational establishments. The specialized departments will remain in most of the institutions planned to be attached.

The comprehensive analysis of the development of the region's VET system made it possible to formulate proposals for the institutions network optimization which are somewhat different from the officially approved by the order of Zaporizhzhia Regional State Administration (Table 2).

Table 2. Ways to optimize the VET institutions network of the region (based on the analytical study)

№	Name of the basic VET institution	VET institution to be attached	Reasoning	Implementation period
1.*	State-owned Berdyansk Centre for Technical and Vocational Education	State-owned Osypenko Vocational Agrarian Lyceum	Small number of VET students, the highest costs per training of one student in the region	2019-2020
2.*	State-owned Zaporizhzhia Construction Centre for Technical and Vocational Education	State-owned Zaporizhzhia Right-bank Vocational Lyceum	Located in the right-bank part of the city, have approximately the same, but insufficient number of applicants	2019-2020
3.	State-owned Mykhailivka Higher Vocational School	State-owned Velyka Bilozerka Vocational Agrarian Lyceum	Small number of VET students, personnel training is carried out for the same occupations as in a bigger VET institution	2020-2021
4.	Separate structural subdivision Nohaisk College of Tavria State Agrotechnological University	State-owned Prymorsk Vocational Agrarian Lyceum	Institutions are actually located nearby and have similar specialization.	2020-2021
5.	State-owned Melitopol Vocational Agrarian Lyceum	State-owned Vesele Vocational Agrarian Lyceum	Small number of VET students, similar areas of training to the Melitopol Vocational Agrarian Lyceum	2020-2021

* - points that coincide with the decision of the Zaporizhzhia Oblast state administration

Considering the number of students and its dynamics, it seems relevant to attach the state-owned Velyka Bilozerka Vocational Agrarian Lyceum and the state-owned Vesele Vocational Agrarian Lyceum to the more powerful institutions. The best option for the state-owned Prymorsk Vocational Agrarian Lyceum would be merger with the separate structural subdivision Nohaisk College of Tavria State Agrotechnological University. As for the state-owned Zaporizhzhia Higher Vocational School, currently it can function as an independent institution. The number of students does not exceed 200 persons at the state-owned Yakymivka Vocational Agrarian Lyceum and the state-owned Vasylivka Vocational Lyceum. In recent years, there have been some positive dynamics of development, and therefore, it is advisable to delay the issue of their optimization for 2-3 years.

Another controversial aspect of the VET institutions optimization is preserving the affiliated vocational institutions as a branch. In this case, there will almost be no financial resources saved after the VET institutions network optimization. Obviously, this way of institutions merger will avoid a number of acute social problems, such as rise of unemployment among teachers, destruction of property, reduction of tax revenues to local budgets, etc. However, it does not allow to improve the quality of training, upgrade the material and technical resources, and reduce the financial burden on the regional budget.

Along with optimization of the VET institutions network, it is also important to choose the best specialization of the vocational institution from the economic point of view and the needs of the labour market. It seems logical to concentrate the workers training of a particular occupation in those institutions where the costs of these specialists training are minimal. Following this idea, it is possible to determine roughly the amount of financial resources that can be saved if the region's minimal cost of training one VET student is taken as the basis for estimation of the workers training. If this approach were applied to Zaporizhzhia Oblast, UAH 39.5 million could be saved only on training cooks which is the most popular occupation.

Developing programme and tasks for the VET system reform in Zaporizhzhia Oblast, it is necessary to focus on new promising occupations. Such areas of economic activity as the resort and tourist industry and fisheries remain underestimated from the point of view of personnel training.

