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OF SOCIETY DEVELOPMENT**

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## **7. Educational support for development agrarian sector in market environment**

The acceleration of the agrarian sector development is directly related to educational activity, which is the driving force behind the functioning of the economic system and is based on the creation and exploitation of tools for business development. This approach involves the integration of the system of training and personnel development into the overall strategy of the company's sales activities in the external economic space.

We believe that an adequately constructed training system can increase the competence of all categories of employees, their loyalty to the company, find and expand bright talents, which in the future are able to provide competitive advantages of the company.

The system of training and development should be formed in accordance with the strategic goals of the development of market relations of the enterprise.

Staff training should combine compliance with corporate standards and the benefits of an individual approach.

Alot domestic scholars, among which are V. Andriychuk [1], S. Blagin [2]. Yu. Lupenko [3], S. Lupenko [4] and others paid their attention educational support for the development agrarian sector in market environment.

According to V. Andriychuk [1], two main models of the logistic organization of agrarian business are currently being formed:

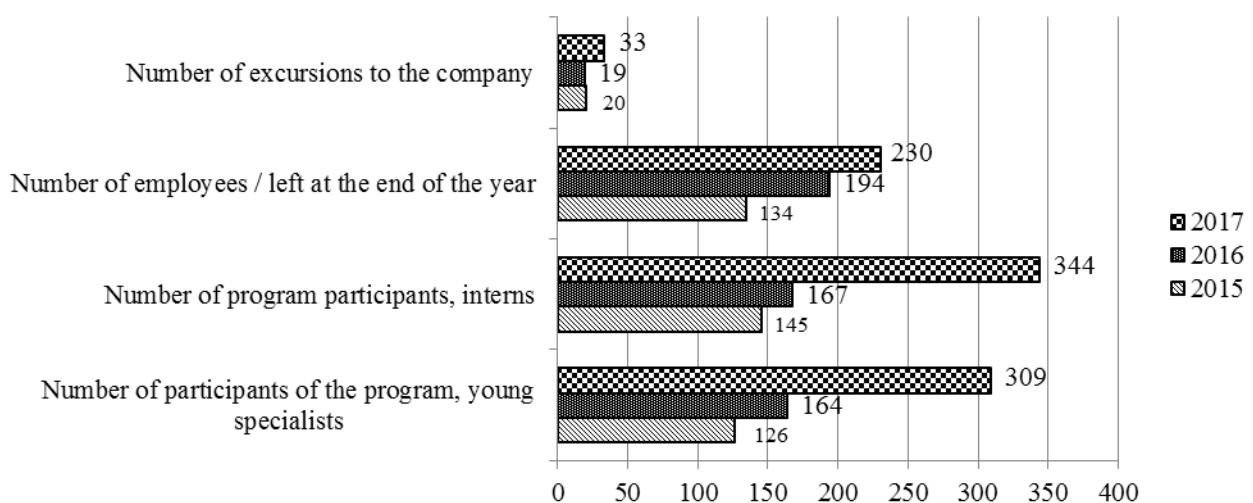
- corporate – the successive stages of supply, support, production and distribution are within the scope of single or multiple control. The goal is to maximize corporate financial results;
- cooperative – is controlled through democratic governance and multi-level equal co-ownership [1].

For example, a member of the "SVAROG WEST GROUP" corporation can participate in general corporate training programs, open educational events [4].

Ukrlandfarming PLS implements a multi-vector program of cooperation with leading Ukrainian agricultural institutions of higher education. The Strategic Partnership Agreement was signed with Mykolaiv National Agrarian University, Kherson State Agrarian University, Poltava State Agrarian Academy, Dnipropetrovsk Agrarian and Economic National University, Zhytomyr National Agroecological University [6].

Ukrlandfarming PLS offers to applicants of higher education of agrarian universities the following: the opportunity to gain independent experience in the company – leadership, the opportunity to gain practical experience and theoretical knowledge in the professional environment as a whole, as well as in studying the features of the market environment of the agricultural sector. According to the results of the practice (on condition of successful completion of the practice for graduates of ZOO – 4 and 5 courses, the company provides a certificate confirming the completion of specialized training within the company).

PJSC "Myronivsky Bakery", specially for active youth, launched the "Start a Career with MHP" program, which in 2017 changed its name to "MHP START" and significantly expanded its activity – twice as many higher education graduates were able to become its participants (Fig. 1).



*Fig. 1. Number of participants of the MHP START program, persons*  
*Source: formed on the basis of materials [8]*

According to the results of the study, it was found that in 2017, 653 students took part in the MHP START program, 230 of which became permanent employees of the holding. As part of the 2017 Program, excursions to enterprises are organized not only for the participants of the Program, but also for university teachers. Within the framework of the Program, the company offers higher education applicants the opportunity to visit the production facilities of the holding, to practice or internships on the most up-to-date equipment and become part of a team of professionals along with MHP.

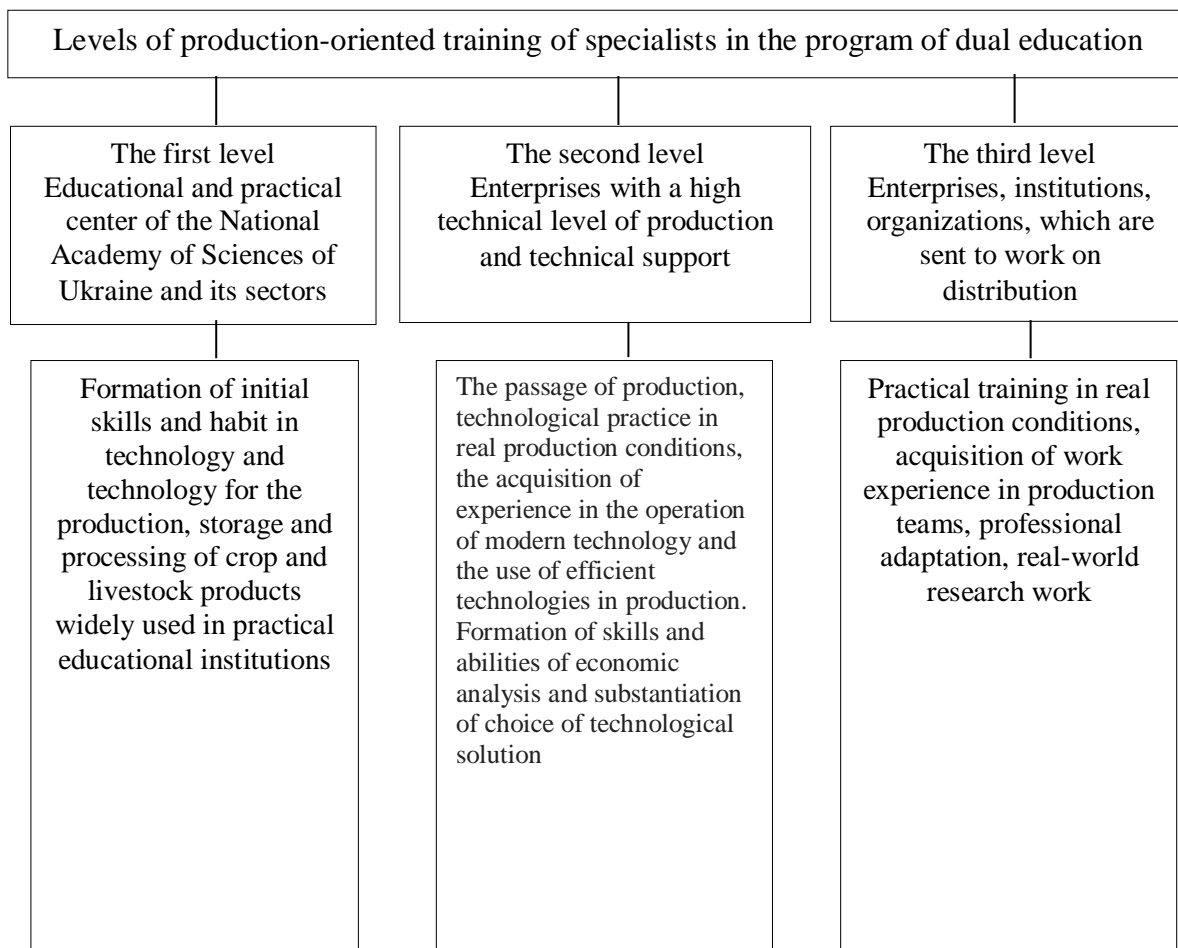
Agrarian companies are increasingly in need of young people with the necessary skills in the field of foreign trade, especially as regards the expansion of geography of exports and the search for new effective channels for the marketing of agrarian sector products. We believe that the main ways to solve this problem are:

- Orientation of entrepreneurs to professionally-oriented training of young specialists (providing a basis for practice, as well as "first place of work");
- Improvement and demand of the dual form of education at enterprises of different scale of activity.

Dual education is a comprehensive training: theories at the university and practice at the enterprise. This form of education contributes to the greater integration of education, science and business and is widely distributed in Germany, Austria, Switzerland.

The need for implementation of the dual form of education in the education of Ukraine was introduced in 2014 during the First International Scientific and Practical Conference "Dual Education as a Response to the Challenges Faced by the Modern System of Ukrainian Education", conducted by the Representative Office of the Fund. Friedrich Ebert in Ukraine (FFE) in partnership with the Ukrainian Association of Marketing (UAM) [6].

A regional approach to the organization of dual education with the integration of regional universities and enterprises for the training of specialists is becoming widespread (Fig. 2).



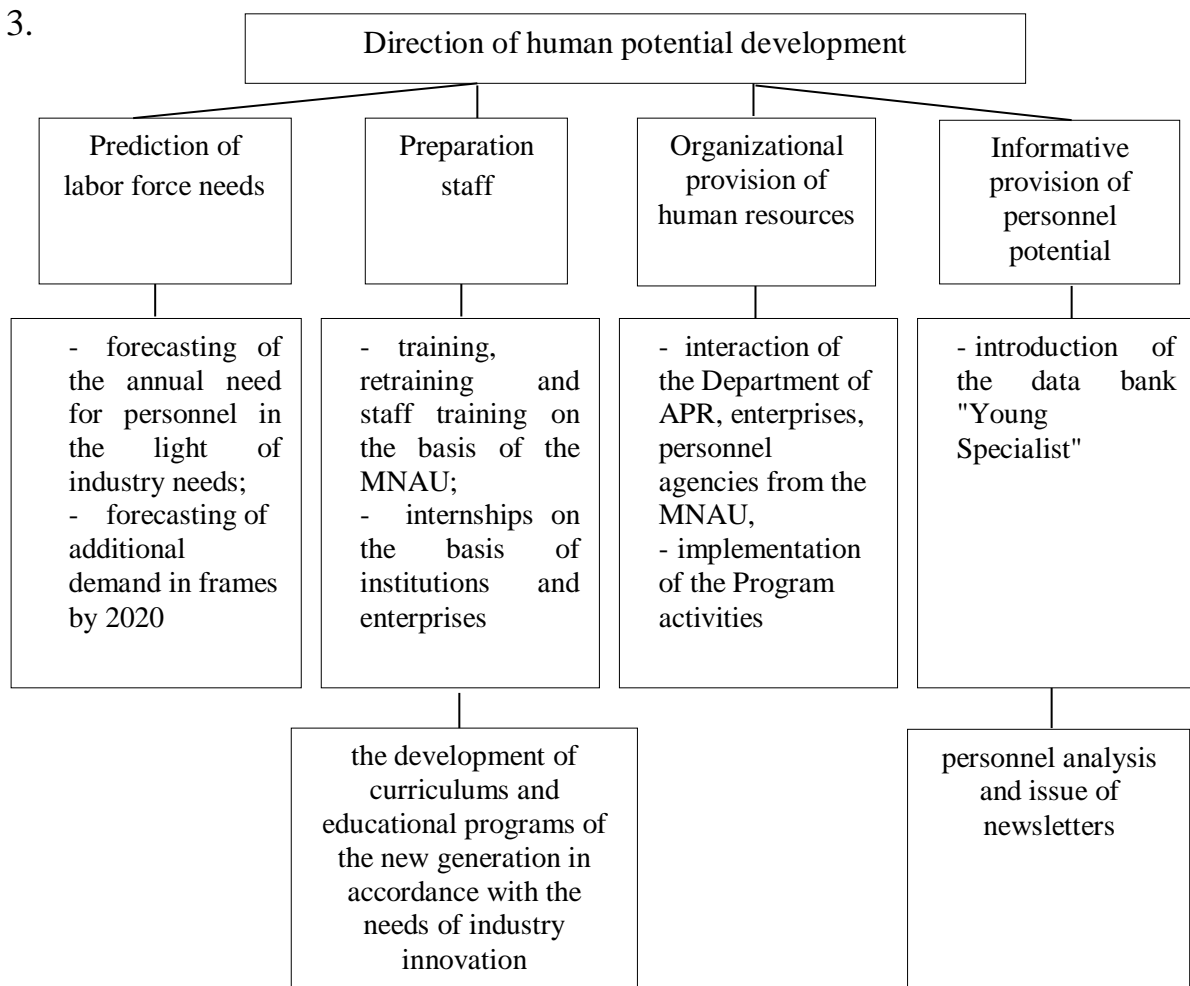
*Fig. 2. Training of specialists in the dual education program for Mykolaiv region*  
*Source: formed on the basis of materials [1]*

Such a partnership is aimed at realization of measures on formation of human capital as a strategic resource of the economic sector of the Ukrainian economy:

- creation of the system and conditions for preparation, formation of a new generation of highly educated professionals who have creative thinking, the ability to comprehensively solve problems that are able to assess the situation and realize a sustainable dynamic and progressive development of the economy;
- to provide agricultural sector of the region with professional personnel, to consolidate them in production;
- to reduce the outflow of skilled personnel from rural areas;
- higher educational level of managerial personnel employed in production;
- preservation of regional higher education and science;
- to provide and develop intellectual and creative potential through the system of education and training "for life".

Activation of dual education in Ukraine is due to the creation of Agriintern (agriculture) – the only information platform for practical training. This event was the first attempt to bring together all stakeholders to develop conceptual approaches to the implementation of dual education at the state level. Adopted by the Ministry of Education and Science of Ukraine in 2017. The concept of training specialists for the dual form of education is based on the German experience [6].

The dual form of education implies the use of the latest scientific advances, innovations and technologies not only for university education and production, but also for the achievements of academic science [6]. The most effective organizational form of cooperation is the Educational-Scientific-Production Consortium of Agrarian Higher Education Institutions, Research Institutes and Industrial Enterprises of Ukraine [6]. Proposed areas for the development of human resources are presented in Fig. 3.



*Fig. 3. Development of personnel potential of the agrarian sector of the economy of Mykolaiv region*

*Source: formed on the basis of materials [1]*

On the basis of the conducted research, a forecast was made of the number of people employed at MHP START in 2019, which is one of the areas of human potential development (using methods of economic and mathematical modeling, which include linear and polynomial) trend, exponential and logarithmic functions) (Table 1).

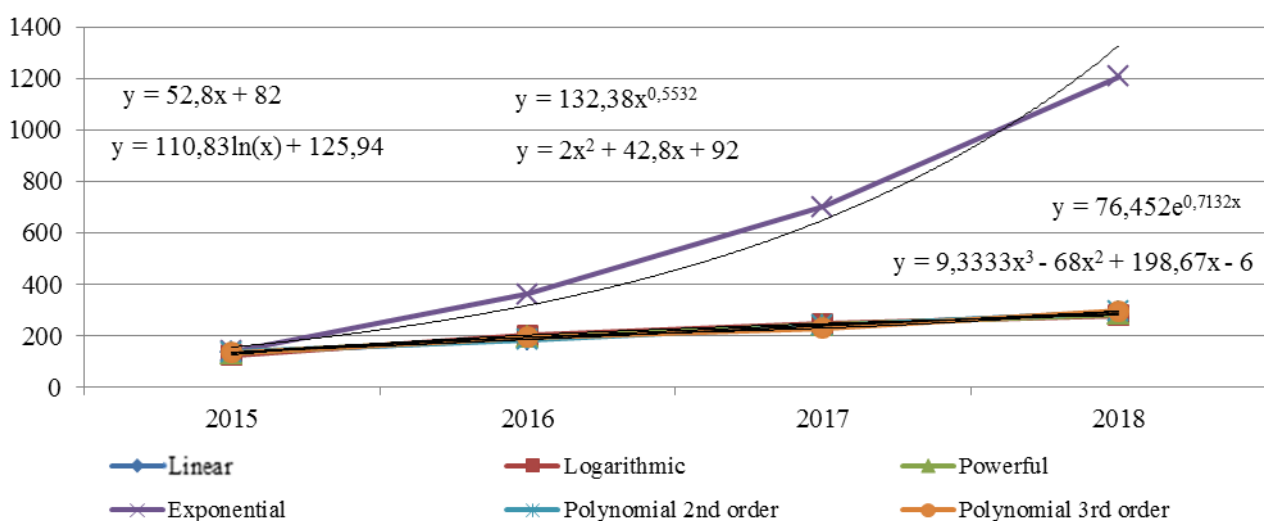
*Table 1. Number of able-bodied workers under the MHP START program 2015-2018, Persons*

No	Year	Number of people employed
1	2015	134
2	2016	194
3	2017	230
4	2018	298

*Source: formed on the basis of materials [8]*

Thus, the number of people employed to MHP START during the studied periods is increasing. In 2018, their absolute expression is 298, which is 164 persons more than in 2015 (222.4%).

On the basis of the built-up functions of determining the density of communication, it is established (Fig. 4) that the exponential function has the largest deviation of the actual and theoretical values of the predicted index, with the target function  $y = 76,452e^{0,7132x}$ . The power function ( $y = 132,38x^{0,5532}$ ) shows the best connection density.



*Fig. 4. Functions of research results*

*Source: compiled by the authors on the basis of the data of the table 1*



Analyzing the value of the determination coefficient (Table 2), one can trace the highest binding coupling density for power function ( $R^2 = 0,980$ ). To determine the predicted value, we will not take into account the exponential function when making a decision, since its value is negative, which is negatively influenced by the non-effective index. The absolute value, that is, the forecast for 2019 is the most accurate for the power function and is 322 employed persons.

*Table 2 Estimated values of the effective indicator*

Indicator	Linear function	Logarithmic function	Powerful function	Exponential function	Polynomial trend of the 2nd order	Polynomial trend of the 3rd order
MSE	212,200	260,056	87,124	935432,866	363,200	4489,838
$R^2$	0,954	0,941	0,980	-3,327	0,922	0,046
MAD	6,100	-4,276	7,601	796,538	14,600	7,055
MAPE	1,785	-0,472	3,038	277,681	5,565	10,473
The amount of output data	1176,000	1176,000	1176,000	1176,000	1176,000	1176,000
The amount of theoretical data	1202,000	1160,298	1177,212	4362,154	1212,000	1310,043
Deviation	-2,211	1,335	-0,103	-270,931	-3,061	-11,398
Actual value n=4	320,000	320,000	320,000	320,000	320,000	320,000
Forecast value n=4	346,000	304,314	322,472	1952,136	356,000	454,013
Deviation n=4	-8,125	4,902	-0,773	-510,043	-11,250	-41,879

*Source: calculated using MS Excel;*

The conducted research has established that the number of employed at the company is growing, which positively reflects the experience of dual education in the future, namely the involvement of higher education graduates in the enterprise. This measure allows the company to provide the company with highly skilled workers, and those that require specific activities.

Higher education students who studied under the dual form of education, studying the peculiarities of the functioning of agricultural enterprises and investigating their market environment, in the future, will be able to strengthen their competitive position by:

1) intensification of work with international donor organizations (EBRD, USAID, World Bank) on the development and implementation of technical assistance

projects using the harmonization of the national system of technical regulation and standards for agro-industrial regulation;

2) facilitating the conclusion of agreements on joint activities between the regional road services, on the one hand, and investors – integrated agricultural structures that conduct economic activity in the territories of the region, on the other;

3) the formation of an effective sales and logistics system;

4) facilitating the development of infrastructure for the storage and transportation of agricultural products through the introduction of procedures for issuing permits based on the principle of a single window, which will accelerate passage of permitting procedures, land tenure and the feasibility study for a project for the construction of elevators, granaries, logistics centers, as well as river transport infrastructures agricultural cargoes.

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