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## Information support of agricultural entrepreneurship

**Scientific problem.** Addressing present vital issues of socio-economic development of the national economy requires the development of entrepreneurship, which constitutes the basis for the formation of new economic relations and reduces unemployment, rises living standards, creates an innovative environment and serves as a factor in the growth of economic indicators at micro-, meso- and macro-levels. It is known that the concept of entrepreneurship is broad and includes a set of social, economic, political, legal and other relations. The polysemy of the concept (goals, directions, priorities, policies, information and a number of quality indicators of socio-economic development) shows that there is no single accepted definition of entrepreneurship or a clear conceptual apparatus, although differences of opinion are not significant. It should be noted that effective decision-making in business depends on reliable and relevant information support. In modern conditions, entrepreneurs compete in information in the same way they compete in products; accurate and timely information about external/internal socio-economic environment is a burning issue of modern entrepreneurship.

**Analysis of recent researches and publications.** The issue of information support of entrepreneurship has been investigated by many scientists and economists including Yu. Lupenko, M. Malik [4], M. Kropyvko [8], V. Byesyedin, N. Honchar [5], B. Paskhaver, O. Shubravka, N. Moldavan [1], P. Sabluk, L. Kurylo [11], L. Zaburanna [3],

O. Shpykulyak [10], V. Savchuk, Yu. Zaitseva [13], O. Dudzyak [2] and others. A number of important scientific papers conducted by the Education and Scientific Centre "Institute of agrarian economy" is devoted to the problem. However, this issue requires further study. It is also important that entrepreneurs have improved access to research in this field.

**The objective of the article** is theoretical and methodological grounding of the relevance of information support for the development of agricultural entrepreneurship in a changing environment.

**Statement of the main results of the study.** Twenty-first century is the century of information society and is associated with functioning and implementation of intellectual property and intellectual capital that provide innovative direction of socio-economic development, set the focus on education, science, fundamental and applied scientific research and impact entrepreneur's decision-making at different levels. Joseph Schumpeter [14, p. 723] pointed out that entrepreneurship means to do things, which are different from those that the others are doing, and in a different manner. He also emphasized the importance of leadership and innovation, and highlighted the fact that the entrepreneurship is the source of all economic changes.

An interesting point of view is that entrepreneurship means « $1 + 1 > 2$ », i.e. the synergistic effect. This effect implies that the result of joint actions of partners should be higher than the total result of actions of each particular entrepreneur. The same goes for the economic system, whose elements should be harmonious and

agreed, so that the outcome would be better than total results of its separate production lines or fields (elements).

It is also quintessential that producers and exporters have full access to the information on the situation at product markets, the largest and most prospective importers of food, raw materials, goods and services, internal financial and economic state of Ukrainian producers, range of goods and services, existing forms of transactions, changes in applicable laws, reforms, requirements, norms and standards, etc. For instance, world experience shows that the information necessary for entrepreneurs includes data about the mechanisms that reduce production risks, i.e. subsidies, insurance and financing of export-import operations. Therefore, if the information is used to manage the system, it is assessed according to its value and feasibility to achieve the management goal. A. Kharkevich [6, p. 56] suggested calculating the value of information as a change in the probability of achieving the goal in the case of receiving additional information:

$$I_{\text{и}} = \log p_1 - \log p_0,$$

where,  $p_0$  is the initial probability of achieving the goal (before receiving information);

$p_1$  is the probability of achieving the goal after receiving information.

Depending on the result, the information may be empty information, misinformation or pragmatic information, and the approach to assessing the information is accordingly called pragmatic.

In order to form an effective system of strategic information, it is crucial to create a classification as it makes it possible to effectively use the information. The characteristic features defining classification peculiarities of strategic information include the following:

- share of external strategic information;
- dynamics and richness;
- amount of quality and possibility indicators;
- share of confidential information that is a trade secret of enterprise's functioning and development.

Academic research present the law of stability in accordance with the principle of homeostasis (Greek *homeo* - like + *stass* - fixed), which implies that during the interaction with

the environment the system preserves values of main variables within certain limits. Under this law, every activity tends to self-preservation by using its whole potential. Formalized, the law of stability looks as follows:

$$\sum_{i=1}^n R_i > \sum_{i=1}^n (V_{1i} + V_{2i}),$$

where  $R_i$  is the potential of entrepreneurship, based on its resources in  $i$ -subdivision;

$V_{1i}$  and  $V_{2i}$   $i$  are the potentials according to internal and external destabilizing effects respectively.

Thus, the equilibrium state of the system is achieved if the speed of the recovery processes in the system equals or exceeds the rate of change of negative impact factors. This condition helps the company to achieve security from destabilizing factors and guarantees the safety of further activities. According to the methodology of systems theory, there is a need to consider the aspects of business development strategy in the light of the law of stability (the desire to survive, using full potential) and the law of development (the desire to achieve the greatest total potential during the life-cycle).

One of the threats to the development of agricultural entrepreneurship is its high import-dependency (especially import of energy). Consumption of fuels, lubricants, diesel fuel per unit of output value is twice higher than the national economic average. Agricultural entrepreneurship is also dependent on imports of fertilizers, plant protection products, equipment, technologies, etc.

The investment aspects of the development of agricultural business, especially in times of crisis and inflation (Table 1), are crucial. Special attention should be paid to calculating the cost of production and the problem of production amounts and sizes of enterprises. Large companies are able to implement scientific and technological achievements and innovations. It ensures efficient use of land and machinery and maintains high productivity and, therefore, profitability. Hence, in the context of product pricing, methods and forms of business activities are quintessential. Right and timely choice will allow agricultural enterprises to ensure efficient operation, fully load tractors and vehi-

cles, as well as other technical devices. Therefore, close attention should be directed to minimizing capital costs and production costs, effective use of investment resources, and production improvement aimed at increase of eco-

nomical efficiency. The calculation results of the inflation rate using application software suggest deepening negative trends in the investment-innovation field.

Table 1

**Inflation rate index for 2000-2017, %**

	January	February	March	April	May	June	July	August	September	October	November	December	Per year
<b>2000</b>	104,6	103,3	102,0	101,7	102,1	103,7	99,9	100,0	102,6	101,4	100,4	101,6	<b>125,8</b>
<b>2001</b>	101,5	100,6	100,6	101,5	100,4	100,6	98,3	99,8	100,4	100,2	100,5	101,6	<b>106,1</b>
<b>2002</b>	101,0	98,6	99,3	101,4	99,7	98,2	98,5	99,8	100,2	100,7	100,7	101,4	<b>99,4</b>
<b>2003</b>	101,5	101,1	101,1	100,7	100,0	100,1	99,9	98,3	100,6	101,3	101,9	101,5	<b>108,2</b>
<b>2004</b>	101,4	100,4	100,4	100,7	100,7	100,7	100,0	99,9	101,3	102,2	101,6	102,4	<b>112,3</b>
<b>2005</b>	101,7	101,0	101,6	100,7	100,6	100,6	100,3	100,0	100,4	100,9	101,2	100,9	<b>110,3</b>
<b>2006</b>	101,2	101,8	99,7	99,6	100,5	100,1	100,9	100,0	102,0	102,6	101,8	100,9	<b>111,6</b>
<b>2007</b>	100,5	100,6	100,2	100,0	100,6	102,2	101,4	100,6	102,2	102,9	102,2	102,1	<b>116,6</b>
<b>2008</b>	102,9	102,7	103,8	103,1	101,3	100,8	99,5	99,9	101,1	101,7	101,5	102,1	<b>122,3</b>
<b>2009</b>	102,9	101,5	101,4	100,9	100,5	101,1	99,9	99,8	100,8	100,9	101,1	100,9	<b>112,3</b>
<b>2010</b>	101,8	101,9	100,9	99,7	99,4	99,6	99,8	101,2	102,9	100,5	100,3	100,8	<b>109,1</b>
<b>2011</b>	101,0	100,9	101,4	101,3	100,8	100,4	98,7	99,6	100,1	100,0	100,1	100,2	<b>104,6</b>
<b>2012</b>	100,2	100,2	100,3	100,0	99,7	99,7	99,8	99,7	100,1	100,0	99,9	100,2	<b>99,8</b>
<b>2013</b>	100,2	99,9	100,0	100,0	100,1	100,0	99,9	99,3	100,0	100,4	100,2	100,5	<b>100,5</b>
<b>2014</b>	100,2	100,6	102,2	103,3	103,8	101,0	100,4	100,8	102,9	102,4	101,9	103,0	<b>124,9</b>
<b>2015</b>	103,1	105,3	110,8	114,0	102,2	100,4	99,0	99,2	102,3	98,7	102,0	100,7	<b>143,3</b>
<b>2016</b>	100,9	99,6	101,0	103,5	100,1	99,8							
Year	Forecast											Projected values for 2017	Actual value in 2010
<b>2017</b>	$(R^2) \quad 0,83$											162,9	109,1

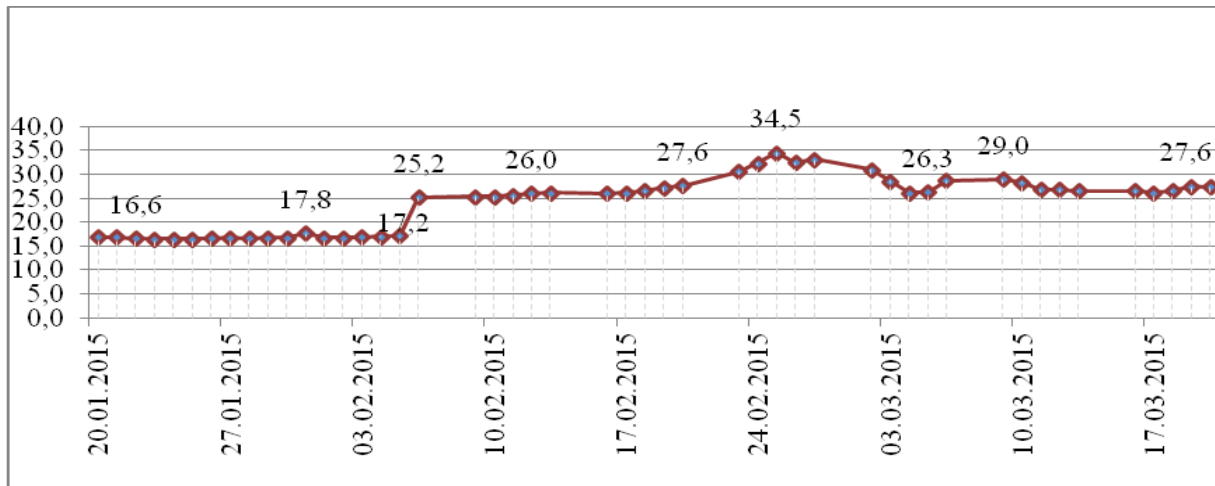
Source: developed basing on the information from the State Statistics Service using EViews.

According to the opinion of B. Pakhaver [1, p. 323], reduction of agricultural production costs is possible when the following factors are taken into account: introduction of advanced farming systems, scientifically grounded crop rotations and production technologies, intensification of production, meeting the requirements of seed fund purity from modified varieties, careful choice of species and directions of fattening animals, establishment of consistent forage base from own-made or purchased forage crops, prices and cost of feed additives, improvement of industry structure, specialization, integration and concentration of production in terms of sustainable production. However, hryvnya devaluation should not be neglected. There are numerous reasons for negative development of the national economic situation, which lead to the deterioration of the already very low level of investment and solvency of the population. Results presented in Fig. 1 allow calling the socio-economic development of the national economy changing or abrupt. This confirms the hypothesis about the need for al-

ternative business development under current conditions.

According to [1], current statistics divides agricultural producers into agricultural enterprises (including farms) and households (especially, private households). Such division points out another factor of growth and development of agricultural entrepreneurship. Economic functions of households include:

- additional production of agricultural products;
- growing labour-intensive crops (vegetables, potatoes, etc.);
- participation in reproduction of labour resources;
- improving the living standards of rural residents by increasing revenues;
- supply of environmentally friendly products of crop-production and livestock-raising to urban residents;
- use of those production means that are inexpedient to be used by large agricultural entities.



**Figure 1. The average rate of US dollar in Ukraine in January-March 2015, UAH**

Source: Calculated according to the data of the State Statistics Service.

Analysis of the unemployment rate shows that the amount of unemployed people in urban areas is higher than in rural areas. Therefore, it should be added that households are of great social significance and serve important social functions:

- employment of working-age population;
- gaining experience of rational housekeeping;
- formation of the psychology of good owner and caring host;
- labour education of youth, formation of ideology, moral values, relationship to the land and the environment;
- preserving traditions and culture of farming.

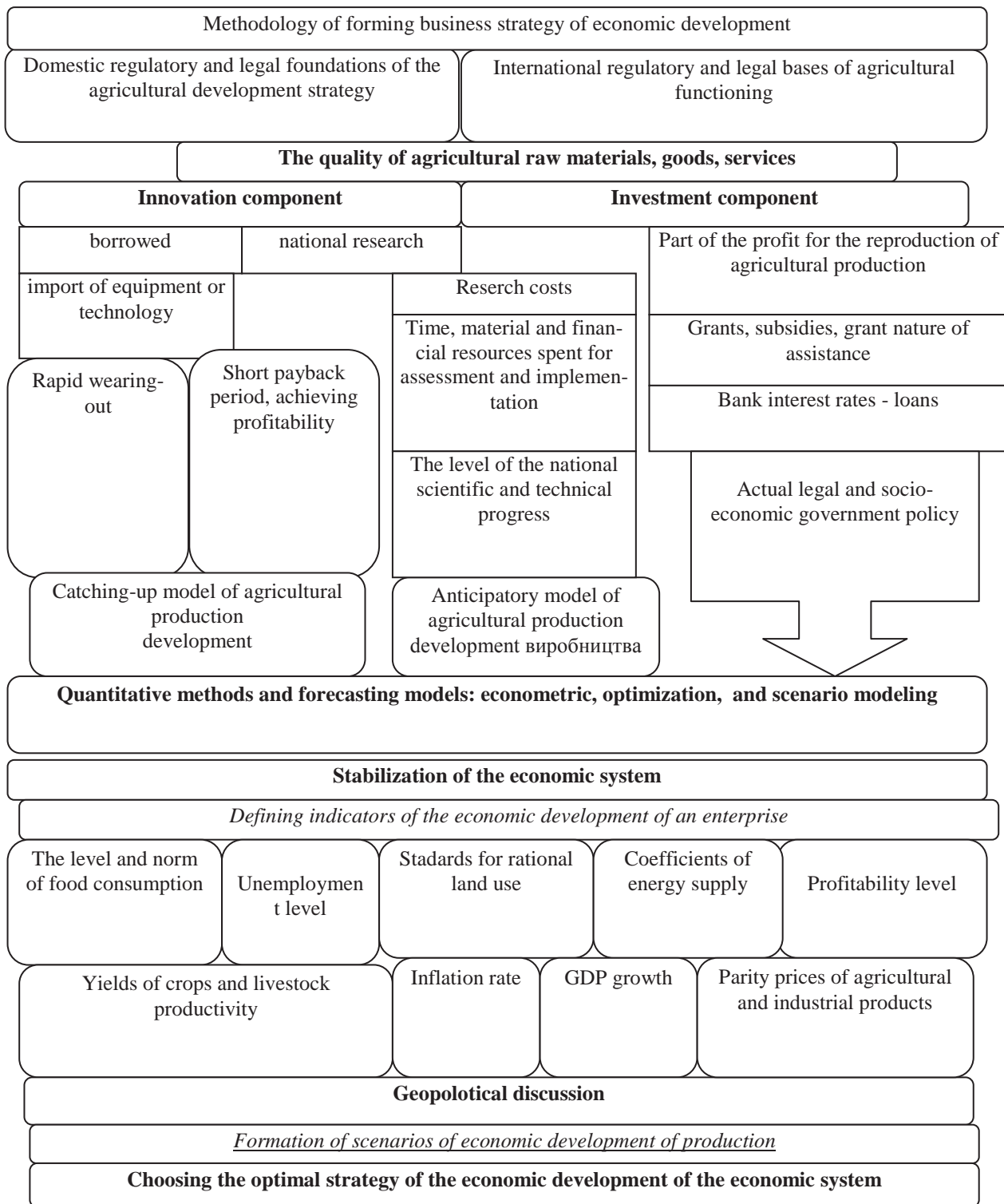
It is important that compared to large agricultural enterprises the owners of private households use land more rationally. They are eager to work on land with low fertility or difficult for technical cultivation.

Thus, while creating the strategy for economic development, it is necessary to consider all negative factors and tendencies and eliminate their effects. Strategic planning horizon reflects temporal possibility of a qualitatively new state. As noted in the source [12], most foreign companies involved in strategic planning develop strategic plans for 5-10 years. Domestic companies' planning horizon is limited to three years, due to the instability of the economy. It might be extended to 5 years for large enterprises. Famous scientists William King and David Cleland note "... that something that is long-term for one organization may

be short-term for another, and planning horizon acceptable for one field may be unsuitable for another" [8, p. 26].

According to the research results, we offer the following scheme of formation of business strategy for the economic development in modern conditions (Fig. 2), which focuses its attention on the quality of agricultural raw materials, goods and services and is supported by investment and innovation factors and conditions. The innovative part of the strategy is very important, and can be either borrowed or own (national). Depending on this factor agricultural entrepreneurship will develop following catching-up or anticipatory model. Over the past decades state policy for education and science support in the developed countries created conditions for growth of high-tech production, i.e. permanent increase of gap between market capitalization of these companies and the value of their material assets. There is a constant increase in the value of intellectual capital that is not associated with material goods, but is mainly determined by the level of human and social capital and is directly related to qualitative changes in the socio-economic relations of the economic system. However, it should be noted that intellectual property might be collective, personal, individual or private, corporate, or governmental. Facilities for intellectual work, the level of comfort, equipment of the workplace should be provided by the worker, the employer and the state. Therefore, import of high-tech equipment at this stage of development of the national economy is justified, as

funding of the national research is insufficient and borrowed innovations provide quick payback, i.e. profitability.



**Figure 2. Methodological guidelines for the formation of the strategy for the economic development of an enterprise. Source: developed by the author.**

Although such equipment wears out quickly due to the fact that usually it is not the latest scientific achievement of the exporting country, its quality is still sufficient. Investment into agricultural production is complicated because of

high interest rate loans as compared to developed countries. For example, the bank rate of 35-45% may not be covered by potential income from agricultural production. Large enterprises are offered the rate of 17%, as the risk

of loan default is low. Such companies have the necessary financial and economic resources (e.g. land that is a highly marketable product at all times) or are regular customers, which again affects the low level of bad debts that are uncollectible. Grants constitute the best possible option for the development of agricultural enterprises. Formation of the scenarios for the development of agricultural production on the basis of crisis prevention indicators (margins of these indicators) makes it possible to critically assess the actual state of agricultural production and find the best option for the economic development under current conditions.

**Conclusions.** Given the state of macroeconomic indicators of the national economy, it should be noted that the most distinctive and effective is innovation-investment type of business activity. Under current geopolitical conditions, special attention should be paid to state support, as it is able to define innovative development direction of the national economy and ensure growth of the socialization level through the development of human, intellectual and social capital. It is necessary to stress that the state policy for intellectualization of production and formation of high-tech production structures in key sectors of the economy calls for good legal framework.

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