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About Association

InterRegioNovation is the International Association devoted to the transfer and exchange of knowledge and innovations at all regional levels (country, region, city, community etc.) between knowledge transfer professionals (business, research institutions, policy makers, government agencies, individuals, others) in all countries of the enlarged Europe, CIS countries and from other continents for stimulating and enhancing economic and social growth in the regions.

This is a policy and research association that brings together all knowledge transfer professionals who are interested in delivering efficient, flexible, innovative and cost-effective services across the private and public sectors.

We work closely with business, research and educational institutions, government agencies, policy makers, NGOs, media, individuals and other stakeholders to promote the interests of their industries.

The Association has its expert database represented by highly skilled professionals with a huge practical and scientific experience in various aspects of innovation development in different EU and CIS countries.

Our members understand the changing needs of the transfer and exchange of knowledge and innovations and through continuous professional development, marketing and networking opportunities offered in this association, we keep current with the latest knowledge trends and issues that challenge people in their work and life journey. We also offer expansive opportunities for partner connection through our networks.

This journal is one of the Association's tools for innovators and everybody who is interested in any aspects of innovation development.

www.interregionovation.eu

About journal

On behalf of the Editorial Board, it gives us a great pleasure to welcome you to the second issue of the Regional Innovations Journal.

The Regional Innovations publishes original research papers, policy analyses, review papers and book reviews in order to establish an effective channel of communication between business, research institutions, policy makers, government agencies, and individuals relative to the analysis of various aspects of knowledge and innovations transfer and exchange within regional dimensions.

This is an independent, peer-reviewed, Internet-based international journal devoted to publishing original research papers of highest quality, sharing ideas and discussing innovation sector within regional dimensions. Normally, four issues are prepared each year. The journal welcomes to submit research papers by exceptional innovators, leading universities, globally recognized business, government agencies, policy makers and political leaders.

We intend that our readers will be exposed to the most central and significant issues in innovations development. We wish to publish papers that exemplify the highest standards of clarity, and that promise to have significant impact on existing front-line debates or to lead to new ones. The journal explores key priorities of the knowledge and innovations transfer and exchange in terms of critical aspects of human life (economy, law, science, business, health, education, culture etc.). We therefore welcome submissions not only from established areas of research, but also from new and emerging fields and those which are less well represented in existing publications, e.g. engineering studies, biomedical research etc.

We also strive to ensure that being under expert evaluation, each submission will receive developmental and supportive comments to enhance the article. Our refereeing process will involve that each submission will be reviewed by one or more specialists in the relevant field. Articles will be added to the volumes and the journal audience will receive e-mails, Facebook, Linkedin and Twitter updates to encourage them to the new articles.

We are delighted with, and immensely grateful to the large numbers of colleagues, both members of the Associations InterRegioNovation and FranceXP (France), representatives from Taras Shevchenko National University of Kyiv (Ukraine), and our friends from the International Forum of the Territories (France) and other institutions, who have supported the editorial process. And we are very proud of the expertise that they collectively bring, which we believe is unsurpassed by any contemporary innovative journal.

We are immensely grateful to our colleagues for their support and advice through the process of setting the journal up, and for the confidence they have placed in us in supporting this initiative at a time of economic uncertainty.

In the development of the Regional Innovations to date, we would like to enlist the support of a number of organisations who wish to promote this online journal to their experts. To ensure its sustainability, we would also like to invite other organisations, networks, conferences and meetings to associate themselves with the Regional Innovations. We therefore aim for the Regional Innovations to become the leading online forum to globally disseminate outstanding research papers on innovation sector in regional dimensions. Being an online periodical, the Regional Innovations is also a forum for exchange of imaginative ideas readers wish to share. Contributions of articles on innovations sector and your comments about this issue are very welcome.

To this end, if you lead, represent, or are a member of any such organisation, please contact us to offer your support and commit to promoting the Regional Innovations as a publication outlet for research undertaken by your experts.

We do hope you enjoy and benefit from the Regional Innovations!

Jean-François Devemy
Publishing Director

Contents

Abstract

The article provides a theoretical and conceptual study of the concept of "sustainability of the agricultural sector in the region" which is completed by "intellectual innovative" component. The factors of influence on the sustainability of Vinnitsa regional agricultural sector are defined. For the first time an economic and mathematical forecasting model of sustainability of the agricultural sector in the region based on the theory of fuzzy logic was developed. An interactive decision support system for managing sustainability of the agricultural sector in the region is developed.

Key words: *sustainability, agricultural industry, model, control, fuzzy logic, decision support system.*

Rapid dynamics of modern living in a market system of coordinates generates new research problems, activates methodological searches and forms new paradigms in research of economic processes. Among these allocated problem of sustainability management and development of the agricultural sector in Ukrainian region through the use of innovative methods of economic and mathematical modeling. The necessity and actuality of modeling and forecasting of sustainability of the agricultural sector development in the region is caused by the fact that during the market reforms underestimation of the economy regulation process was found out and, as a result, inadequate with potential possibilities using by the state management system. This underlines the great importance of this problem that actually caused the subject of this study.

The aim of this work is a theoretical research of the concept of "sustainability of the agricultural sector development in the region" and construction of economic and mathematical model for determining and forecasting the level of sustainability of the agricultural sector of Vinnitsa region based on the theory of fuzzy logic.

Currently, in the economic literature, there is no single and generally accepted definition of sustainability of the agricultural sector, because of the inconsistency and underdevelopment the concepts of sustainability of economic systems development, lack of sufficient information for quantitative measurement of the sustainability degree. Some authors understand sustainability (including agriculture) as the ability of the agricultural sector to counteract negative influences, mainly elemental forces of nature, and also its ability to prevent or weaken the production decline [10,17].

Other researchers consider the sustainability of the agricultural sector development as the sustainability of the average level dynamic row of production volumes and crop yields [15], others - as sustainability of evolution, development of investigated phenomenon [3]. However, in our view the concept of sustainability is not limited by only these features. Sustainability of agrarian development - is not only an opportunity to overcome the adverse effects for agricultural production, but also the ability to use them with the highest effect.

Without denying the contribution of mentioned scientists in the development of the theory of agrarian production sustainability, it should be noted, that recent reforms conducted in the agri-food sector largely were aimed at the regionalization of the economy, its orientation on self-providing. Therefore, the reproductive processes which are being occurred now in the agricultural sector, it is better to consider at the regional level. Furthermore, assessment of sustainability of the agricultural sector development will not be complete due to the magnitude of dynamic rows fluctuation, because it does not allow taking into account social, economic and environmental consequences of sustainable (or unsustainable) development of the agricultural sector. It is necessary to understand that the sustainability of the agricultural sector

development achieved not only by meeting the needs (demand) of the population in food through its mass production. The sustainability of the agricultural sector development should be seen as a category of reproduction, therefore sustainable can be such a variant of development that, allowing fluctuations of production output in some years, providing full compensation of recurring food shortages at the expense of previously established reserves and stocks. However, this applies not to all types of products (for example, grain) since the bulk of agricultural products has limited period of storage.

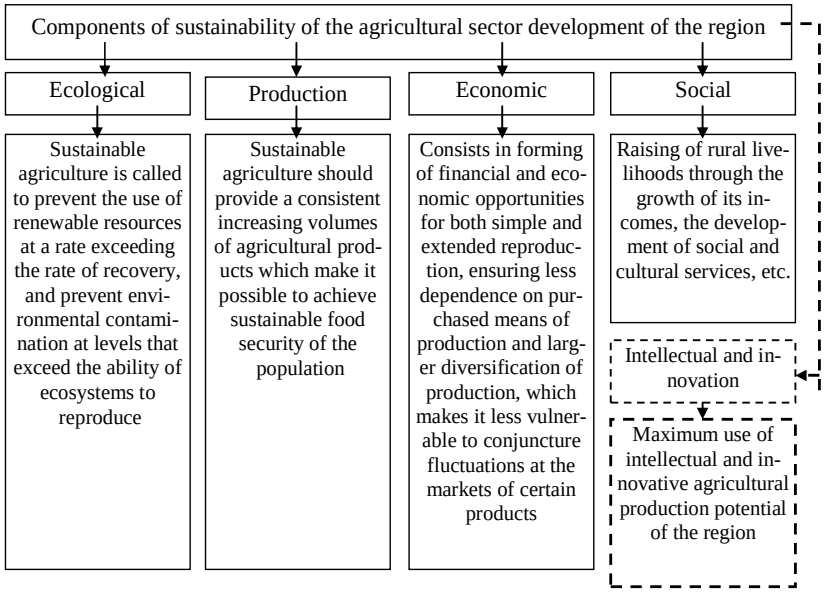
The variety of approaches to determine sustainability of agricultural production caused by both the versatility of this problem and the extraordinary complexity of tasks solved agrarian industry as a whole and its components. The searching for new directions and ways of the development of agricultural sector, that reduces its negative impact on the environment, led to the emergence of a new interpretation of agricultural production sustainability as production oriented to increasing the quality of food and quality of life, to ensuring the safety of the environment and stabilization of the food supply of population in a long term. This approach, which can be called environmental [2], the notion of "sustainability of the agricultural sector development of the region" distinguishes the following components: ecological, production, economic and social. Supplement existing components of sustainability of the agricultural sector development (see picture 1) with "intellectual innovation" component is offered.

Let's consider intellectually innovative component of sustainability of the agricultural sector development of the region in more details.

The first component - is intellectual potential. Unambiguous and generally accepted definition of "intellectual potential" does not exist. Availability of intellectual potential suggests primarily mental capabilities of people and intellect capabilities. A widespread definition is the following: intellectual potential - is the unity of creative and individual labor potentials of workers which characterize their ability to produce material goods using materialization of knowledge and their adequacy to management requirements [8].

The second component – is innovative potential. Currently, the economic activity requires so-called innovative potential, which is interpreted as collection of all kinds of information resources, including technological documentation, patents, licenses, business plans, innovative programs, etc. The state of innovative potential affects the choice of one or another development strategy therefore innovative potential in this case can be interpreted as "measure of readiness" of the economic system to accomplish the objectives of development [8].

Thus, the essence of a systematic approach to the interpretation of sustainability of the agricultural sector development of the region consists of the analysis a balanced production achievement, economic, social, ecological and intellectual-innovative goals facing the agricultural sector of the region.



Picture 1. Components of "sustainability of the agricultural sector development of the region"

For modeling sustainability of the agricultural sector development of Vinnitsa region is proposed to use the most advanced mathematical apparatus - the theory of fuzzy logic which is successfully used in other fields of human activity [5,7,8, 9,11]. The theory of fuzzy logic in technical systems is investigated by L. Zadeh, O. Rotshtein, S. Shtovba and others [14,16] in economic systems by S. Kozlovskyi, A. Matviichuk, Y. Gerasymenko, G. Pchelyanska, B. Kozlovskyi [8, 11], but for modeling sustainability of the agricultural sector development of Vinnitsa region, it is proposed for the first time. Advantages of the theory of fuzzy logic over other mathematical apparatus are given in [6 p. 53], which are the basis for using the theory of fuzzy logic for solving the problem.

Basic methodology of modeling is based on the theory of fuzzy logic envisages a phased solution of such problems [8]: a definition of main factors of influence which characterize the sustainability of the agricultural sector of the region and formalizing the relationships between them in generalized form; definition and formalization of linguistic estimates of factors; construction of fuzzy knowledge base of the interactions between factors; output of fuzzy logic equations based on fuzzy linguistic assessments and knowledge base; optimization of fuzzy model parameters.

Taking into account the basic principles for modeling the sustainability of the agricultural sector development of the region and conceptual apparatus of the theory of fuzzy logic, input factors of model for determining the sustainability of the agricultural sector of the region is given in table 1.

Table 1

Input factors (variables) of model and its linguistic assessment

Input factor (variable)	Name of the input parameter (of variable)	Range of the input parameter	Linguistic assessment of input parameters (terms)
1	2	3	4
x_1	Gross agricultural output in the region	10-30 billion UAH	Low, 10-15 billion UAH, (H) Average, 15-25 billion UAH, (C) High, more than 25 billion UAH, (B)
x_2	Grain and leguminous crops production in the region	20-70 million quintal	Low, до 20-30 million quintal (H) Average, 30-40 million quintal, (C) High, 40 -70 million quintal, (B)
x_3	Sugar beet production in the region	15-50 million quintal	Low, till 15-20 million quintal, (H) Average, 20-35 million quintal, (C) High, 35-50 million quintal, (B)
x_4	Rapeseed production in the region	1-8 million quintal	Low, 1-2 million quintal, (H) Average, 2-4 million quintal, (C) High, 4-8 million quintal., (B)
x_5	Meat production (slaughter weight) in the region	150-400 thousand tons	Low, 150-200, (H) Average, 200-300, (C) High, 300-400, (B)
x_6	Milk production in the region	800-950 thousand tons	Low, 800-850, (H) Average, 850-900, (C) High, 900-950, (B)
x_7	Profitability whole enterprises activities of the agricultural sector in the region	3-50 %	Low, 3-5%, (H) Average, 5-20%, (C) High, 20-50%, (B)
x_8	Average prices of grain and leguminous crops in the region	1-4 thousand UAH per ton	Low, 1-2, (H) Average, 2-3, (C) High, 3-4, (B)
x_9	Average prices of animal husbandry in the region	2-8 thousand UAH / ton	Low, 2-3 thousand UAH / ton, (H) Average, 3-6 thousand UAH / ton, (C) High, 6-8 thousand UAH / ton, (B)
x_{10}	Average prices for milk and dairy products in the region	1-7 thousand UAH / ton	Low, 1-2 thousand UAH / ton, (H) Average, 2-4 thousand UAH / ton, (C) High, 4-7 thousand UAH / ton, (B)
x_{11}	Balance of foreign trade in Vinnitsa region	30-50 million U.S. $	Negative -30-0 million U.S., (HH) Low, 0-10 million U.S., (H) Average 10-30 million U.S., (C) High, 30-50 million U.S., (B)
x_{12}	Investments in agriculture of Vinnitsa region	500-3000 million UAH	Low, 500-1000 million UAH, (H) Average, 1000-2000 million UAH, (C) High, 2000-3000 million UAH, (B)
x_{13}	The amount of subsidies in agriculture from the state budget	50-300 million UAH	Low, 50-100 million UAH, (H) Average 100-200 million UAH, (C) High, 200-300 million UAH, (B)
x_{14}	The inflation rate in Ukraine	0-50 %	Low, 0-2 %, (H)

			Average, 2-10 %, (C) High, 10-50 %, (B)
x_{15}	The level of disposable income per capita in the region	10-70 thousand UAH / year	Low, 10-20 thousand UAH / year, (H) Average, 20-40 thousand UAH / year, (C) High, 40-70 thousand UAH / year, (B)
x_{16}	The average wage in the region	1-7 thousand UAH / month	Low, 1-2 thousand UAH / month, (H) Average, 2-4 thousand UAH / month, (C) High, 4-7 thousand UAH / month, (B)
x_{17}	The average number of workers employed in agricultural production in the region	25-50 thousand people / year	Low, 20-30 thousand people / year, (H) Average, 30-40 thousand people / year, (C) High, 40-50 thousand people / year, (B)
x_{18}	The number of agricultural enterprises in the region	1-3 thousand units / year	Low, 1-1,5 thousand units / year, (H) Average, 1,5-2 thousand units / year, (C) High, 2-3 thousand units / year, (B)
x_{19}	Indices of consumer prices of goods and services in the region	50-150 %	Low, 50-90 %, (H) Average, 90-110 %., (C) High, 110-150%., (B)
x_{20}	The volume of sown areas of basic agricultural crops in the region	1-2 million hectares	Low, 1-1,2 million hectares, (H) Average, 1,2-1,7 million hectares, (C) High, 1,7-2 million hectares, (B)
x_{21}	Yields of grain and leguminous crops in the region	30-70 quintals per hectare	Low, 30-40 quintals per hectare, (H) Average, 40-50 quintals per hectare, (C) High, 50-70 quintals per hectare,(B)
x_{22}	Yields of sugar beet	200-700 quintals per hectare	Low, 200-300 quintals per hectare, (H) Average, 300-400 quintals per hectare, (C) High, 400-700 quintals per hectare, (B)
x_{23}	Yields of rapeseed	10-40 quintals per hectare	Low, 10-15 quintals per hectare, (H) Average, 15-30 quintals per hectare, (C) High, 30-40 quintals per hectare, (B)
x_{24}	Emissions of polluting substances into the air of the region	30-200 thousand ton	Low, 30-80 thousand ton, (H) Average, 80-120 thousand ton, (C) High, 120-200 thousand ton, (B)
x_{25}	Natural disasters in the region	0-100 points	Low, 0-25, (H) Average, 25-50, (C) High, 50-100, (B)
x_{26}	Intellectual potential of the region	0-100 points	Low, 0-30, (H) Average, 30-60, (C) High 60-100, (B)
x_{27}	Innovative potential of the region	0-100 points	Low, 0-30, (H) Average, 30-60, (C) High 60-100, (B)
x_{28}	The level of political stability in the country	0-100 points	Low, 0-30, (H) Average, 30-60, (C) High 60-100, (B)

For establishing the hierarchical relationships between the factors that affect the sustainability of the agricultural sector of the region group them into the following groups: production (a); economic and financial (e); social (s); natural and environmental (p); expert and intellectual factors (i). These groups of factors are given in the form of an "output tree" (see pictures 2-6).

According to pictures 2-6 linguistic variables factors a, e, s, p, i are defined using the following correlations:

$$a = f_a(x_1, x_2, x_3, x_4, x_5, x_6, x_7), \quad (1)$$

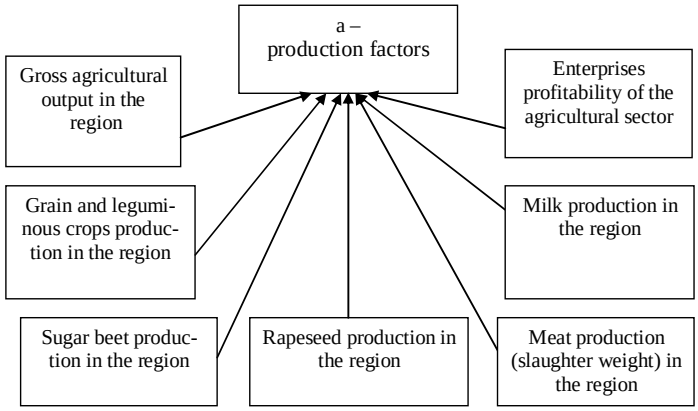
$$e = f_e(x_8, x_9, x_{10}, x_{11}, x_{12}, x_{13}, x_{14}), \quad (2)$$

$$s = f_s(x_{15}, x_{16}, x_{17}, x_{18}, x_{19}), \quad (3)$$

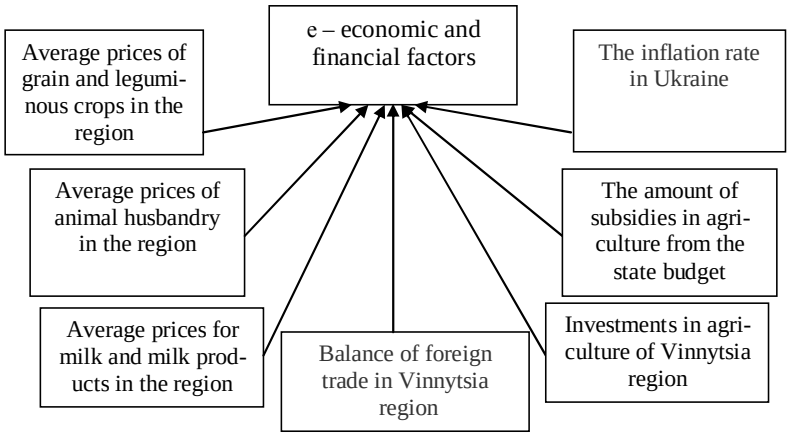
$$p = f_p(x_{20}, x_{21}, x_{22}, x_{23}, x_{24}, x_{25}), \quad (4)$$

$$i = f_i(x_{26}, x_{27}, x_{28}), \quad (5)$$

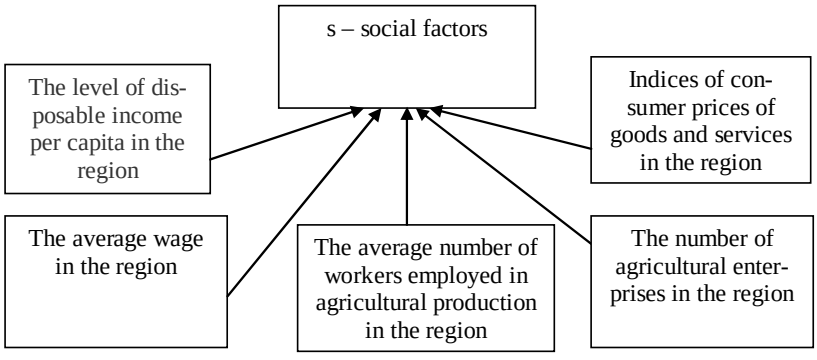
where $X_1 \div X_7$ – production factors; $X_8 \div X_{14}$ – economic and financial factors; $X_{15} \div X_{19}$ – social factors; $X_{20} \div X_{25}$ – natural and environmental factors; $X_{26} \div X_{28}$ – expert and intellectual factors.



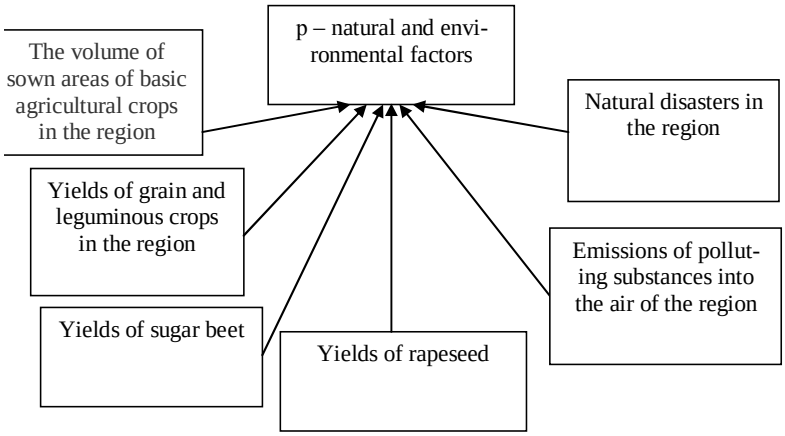
Picture 2. Classification of production factors



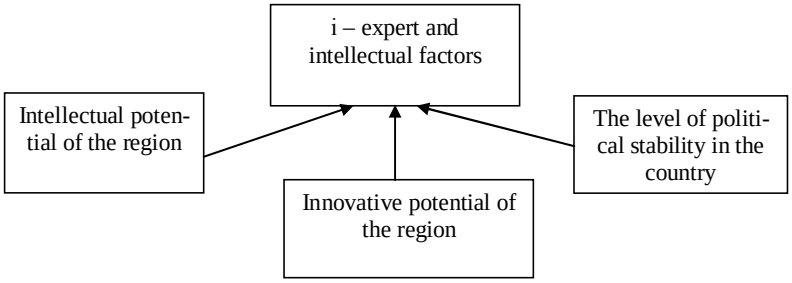
Picture 3. Classification of economic and financial factors



Picture 4. Classification social factors



Picture 5. Classification of natural and environmental factors



Picture 6. Classification of expert and intellectual factors

The output magnitude, that is sustainability of the agrarian sector of Vinnitsa region Y, is defined by the formula:

$$Y = f_Y(a, e, s, p, i, t), \quad (6)$$

where a,e,s,p,i and t – linguistic variables describing respectively industrial, economic and financial, social, natural and ecological, expert-intellectual factors and forecasting period (1M, 6M, 1P, 2P, 3P, where letters M and P indicate a month and a year).

According to the economic situation and the accepted principles of modeling possible changes of sustainability of Vinnitsa regional agrarian sector the following levels are defined (on a scale from 0 to 100):

- Y_1 (85-100) – excellent sustainability (class A or 1);
- Y_2 (66-84) – good sustainability (class B or 2);
- Y_3 (51-65) – satisfactory sustainability (class C or 3);
- Y_4 (31-50) – unsatisfactory sustainability (class Д or 4);
- Y_5 (0-30) – absolute sustainability (class E or 5).

Table 1 shows the universal sets and estimated terms of impact factors $x_1 \div x_{28}$, an assessment of the generalized indicators a,e,s,p,i will implement by a single point scale with a range from "0" to "100" points, using the terms "Low" 0-30 (H), "Medium"30-50 (C), "Above average" 50-75 (BC), "High"75-100 (B). Denote forecast period by t and select the following periods: t_1=1 month; t_2=6 months; t_3=1 year; t_4=2 years; t_5=3 years.

The structure of the economic model of sustainable development management of the agrarian sector of Vinnitsa region is presented in the form of so-called "logical conclusion tree." Logical conclusion tree – is a graph which shows logical connections between forecasting indicator Y and factors $\{x_1 \ldots x_{28}\}$, that affect this forecasting indicator Y compliance with correlations given in formulas (1)-(5).

The structure of economic-mathematical model of sustainable development management of the agrarian

sector of Vinnitsa region will have the form shown in Picture 7.

The analysis of the given model of sustainable development management of the agrarian sector of Vinnitsa region, indicates that this model actually consists of five other interrelated models: a model of sustainability of production branch in the region; a model of sustainability of economic and financial system in the region; a model of sustainability of social system in the region; a model of sustainability of natural-ecological system of the region; a model of sustainability of expert-intellectual level of the region.

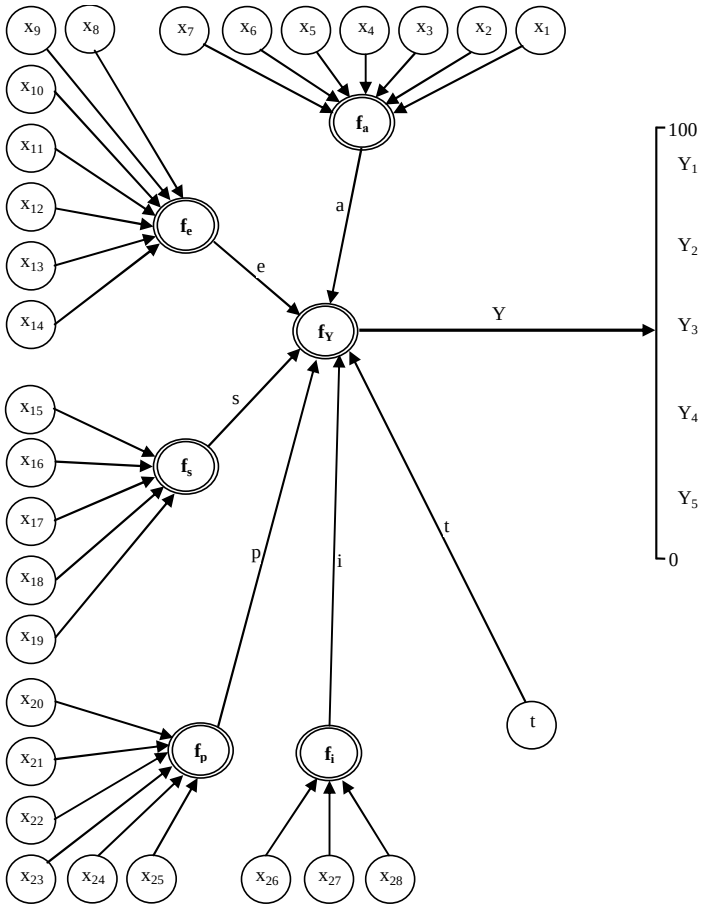
While constructing the model input quantitative and qualitative parameters are operated simultaneously. The input parameters $\{x_1 \ldots x_{24}\}$ are quantitative, and to describe them statistical data are used; parameters $\{x_{25} \ldots x_{28}\}$ – are qualitative, therefore to describe them a conditional point scale assessments from "0" to "100" points is used.

The theory of fuzzy sets presupposes the levels' definition (terms) of the output indicator changes. Each term is submitted by fuzzy set with the appropriate membership function.

For description of terms proven method is used [5,6,7,8,9,11,14,16], therefore for the construction of terms of all variables of determining and predicting model of sustainability indicator of the agrarian sector of Vinnitsa region the formula is used (7). At the same time the terms presented in the form of fuzzy sets, using the model of membership function (MF):

$$\mu^{T}(x) = \frac{1}{1 + \left[\frac{x - b}{c}\right]^{2}}, \quad (7)$$

where b and c - MF parameters; b - coordinate of the maximum of function; c - concentration factor of stretching.



Picture 7. Structural model of sustainable development management of agrarian sector of Vinnitsa region

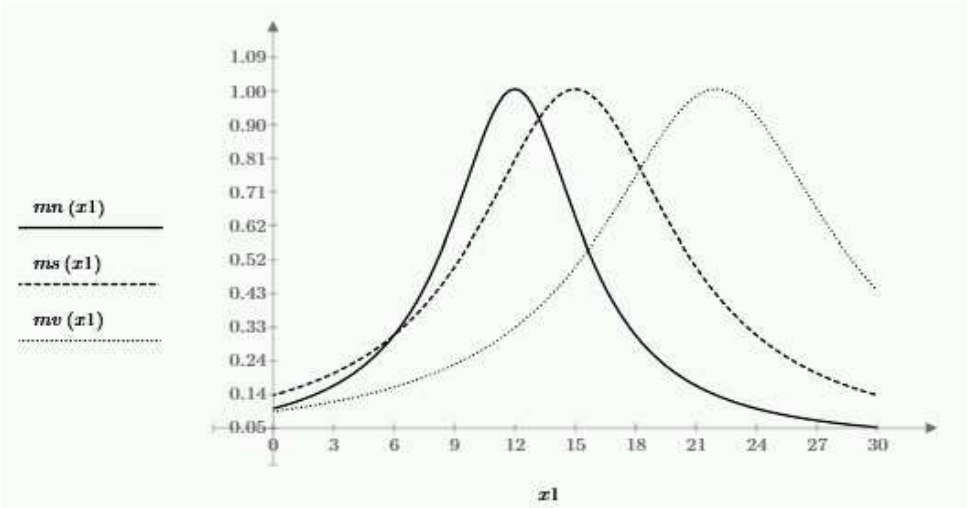
Value of the coefficients b and c for the variable x_1 is given in table 2 (for example).

Table 2

Value of the parameters b and c membership functions of variables x_1 and x_2

Input variables (parameter)	Name of the input variable (parameter)	Linguistic assessment of input variables (terms)	b	c
x1	Gross agricultural production in the region, billion UAH	H	12	4
		C	15	6
		B	22	7

The choice of membership function (see formula 7) of this type is due to the fact that it is enough flexible and simple, because it is defined by only two parameters, and also is more convenient for the further establishment of the model. For example, the membership function for variable x_1 is presented in picture 8.



Picture. 8. Membership function for variable x_1

The next step of modeling is to formulate a hierarchical knowledge base. For building the knowledge base information obtained from experts of The Department of Agroindustrial Development and the Department of Regional Economic Development of Vinnitsa Regional State Administration and the Main Department of Statistics in Vinnitsa region is used, factographic information of central executive authorities of Ukraine and information of specialists in this branch.

Let's consider the correlation (6). To estimate the importance of linguistic variables which show causal relationship between the sustainability of the agrarian sector of Vinnitsa region Y and production, economic-financial, social, natural-ecological, expert-intellectual factors the term-set system is used, that is suggested above. Then the knowledge base for the variable Y, which characterizes the sustainability of the agrarian sector of Vinnitsa region, will have the form shown in table 3.

Table 3

Knowledge base of variable Y

a	e	s	p	i	t	Y	w
H	H	H	H	H	1M	Y_5	w_1
H	C	C	H	H	6M	Y_5	w_2
C	H	C	H	H	1P	Y_5	w_3
H	C	H	C	C	6M	Y_4	w_4
C	C	H	H	C	1P	Y_4	w_5
C	H	C	C	H	3P	Y_4	w_6
C	C	C	C	C	1M	Y_3	w_7
BC	H	C	BC	BC	1P	Y_3	w_8
B	H	B	H	H	2P	Y_3	w_9
C	BC	BC	BC	H	1P	Y_2	w_{10}
BC	C	BC	C	C	2P	Y_2	w_{11}
B	B	B	H	C	3P	Y_2	w_{12}
B	B	B	B	B	6M	Y_1	w_{13}
B	BC	BC	BC	C	2P	Y_1	w_{14}
BC	B	B	BC	B	3P	Y_1	w_{15}

Each rule of knowledge base represents an expression "IF-THEN". Rules with the same output parameter are integrated into the rows of tables by the logical statement "OR". The weight of rules of w expresses a subjective confidence of the expert in this rule. At the stage of formation of fuzzy model structure of all rules weight of knowledge base equal to unity is taken [8].

To implement the fuzzy logic conclusion it is necessary to make the transition from logical expressions to fuzzy logic equations [14]. Such equations are obtained by replacing the linguistic values with the value of membership functions and operations "AND" and "OR" - with fuzzy logic operations of intersection $\wedge$ and union$\vee$. The Weight of rules in the knowledge base is taken into account by multiplying fuzzy expression, which corresponds to each row of base, by the appropriate value of weight.

Linguistic expressions shown in table 3 correspond to the following fuzzy logic equation - see. Formula 8-12.

$$\mu^{Y_5}(Y) = w_1 \cdot [\mu^{H}(a) \cdot \mu^{H}(e) \cdot \mu^{H}(s) \cdot \mu^{H}(p) \cdot \mu^{H}(i) \cdot \mu^{1M}(t)] \vee w_2 \cdot [\mu^{H}(a) \cdot \mu^{C}(e) \cdot \mu^{C}(s) \cdot \mu^{H}(p) \cdot \mu^{H}(i) \cdot \mu^{6M}(t)] \vee w_3 \cdot [\mu^{C}(a) \cdot \mu^{H}(e) \cdot \mu^{C}(s) \cdot \mu^{H}(p) \cdot \mu^{H}(i) \cdot \mu^{1P}(t)]; \quad (8)$$

$$\mu^{Y_4}(Y) = w_4 \cdot [\mu^{H}(a) \cdot \mu^{C}(e) \cdot \mu^{H}(s) \cdot \mu^{C}(p) \cdot \mu^{C}(i) \cdot \mu^{6M}(t)] \vee w_5 \cdot [\mu^{C}(a) \cdot \mu^{C}(e) \cdot \mu^{H}(s) \cdot \mu^{H}(p) \cdot \mu^{C}(i) \cdot \mu^{1P}(t)] \vee w_6 \cdot [\mu^{C}(a) \cdot \mu^{H}(e) \cdot \mu^{C}(s) \cdot \mu^{C}(p) \cdot \mu^{H}(i) \cdot \mu^{3P}(t)]; \quad (9)$$

$$\mu^{Y_3}(Y) = w_7 \cdot [\mu^{C}(a) \cdot \mu^{C}(e) \cdot \mu^{C}(s) \cdot \mu^{C}(p) \cdot \mu^{C}(i) \cdot \mu^{1M}(t)] \vee w_8 \cdot [\mu^{BC}(a) \cdot \mu^{H}(e) \cdot \mu^{C}(s) \cdot \mu^{BC}(p) \cdot \mu^{BC}(i) \cdot \mu^{1P}(t)] \vee w_9 \cdot [\mu^{B}(a) \cdot \mu^{H}(e) \cdot \mu^{B}(s) \cdot \mu^{H}(p) \cdot \mu^{H}(i) \cdot \mu^{2P}(t)]; \quad (10)$$

$$\mu^{Y_2}(Y) = w_{10} \cdot [\mu^{C}(a) \cdot \mu^{BC}(e) \cdot \mu^{BC}(s) \cdot \mu^{BC}(p) \cdot \mu^{H}(i) \cdot \mu^{1P}(t)] \vee w_{11} \cdot [\mu^{BC}(a) \cdot \mu^{C}(e) \cdot \mu^{BC}(s) \cdot \mu^{C}(p) \cdot \mu^{C}(i) \cdot \mu^{2P}(t)] \vee w_{12} \cdot [\mu^{B}(a) \cdot \mu^{B}(e) \cdot \mu^{B}(s) \cdot \mu^{H}(p) \cdot \mu^{C}(i) \cdot \mu^{3P}(t)]; \quad (11)$$

$$\mu^{Y_1}(Y) = w_{13} \cdot [\mu^{B}(a) \cdot \mu^{B}(e) \cdot \mu^{B}(s) \cdot \mu^{B}(p) \cdot \mu^{B}(i) \cdot \mu^{6M}(t)] \vee w_{14} \cdot [\mu^{B}(a) \cdot \mu^{BC}(e) \cdot \mu^{BC}(s) \cdot \mu^{BC}(p) \cdot \mu^{C}(i) \cdot \mu^{2P}(t)] \vee w_{15} \cdot [\mu^{BC}(a) \cdot \mu^{B}(e) \cdot \mu^{B}(s) \cdot \mu^{BC}(p) \cdot \mu^{B}(i) \cdot \mu^{3P}(t)]. \quad (12)$$

In these equations, letters „H", „C", „BC", „B" abbreviated form marked the names of terms "Low", "Average", "Above average" and "High".

Significance of levels of membership functions in equations (8) - (12) are determined by fuzzy knowledge bases of production, economic-financial, social, natural-ecological, expert-intellectual factors of development.

Fuzzy Logic Equations (8) - (12) is a mathematical implementation of model of sustainable development management of the agrarian sector of Vinnitsa region.

Defuzzification is the last stage of the modeling and represents an inverse transformation of the found fuzzy expression (conclusion) in the estimated or forecasted output parameter (variable) which is subjected to modeling and forecasting. There are various methods of defuzzification, the selection and application of which depends on an object of modeling [8].

Based on the characteristics of modeling object and the character of output parameter (variable) for solving logical equations defuzzification method is chosen, which is called "expanded method of center of weights" [1]. In this case, when the output parameter (variable) has "n" terms, the calculation of the center of weights is reduced to the solution of equation (13):

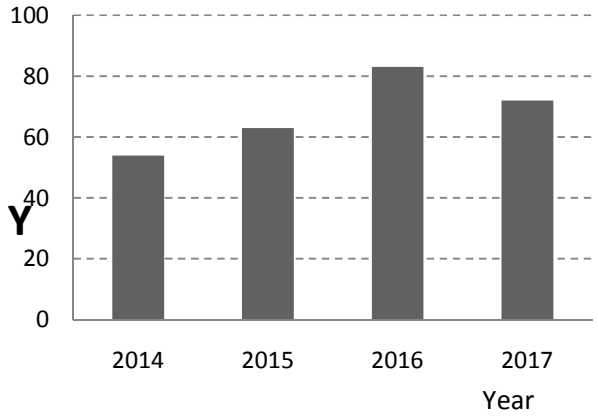
$$Y = \frac{\sum_{i=1}^{n}\left[Y_E + (i-1)\cdot\frac{Y_A - Y_E}{n-1}\right]\cdot\mu^{Yi}}{\sum_{i=1}^{n}\mu^{Yi}}, \qquad (13)$$

where n - number of (discrete values) terms of the variable "Y";

$X_E(X_A)$ - lower (upper) range limit of the variable "Y";

μ^{Yi} - membership function of the variable "Y" to the fuzzy term " Y_i ".

In the mathematical package Matlab 6.1 [4] an experiment, using the foregoing method is performed. Picture 9 shows the results of application the methodology presented above of determining and forecasting the level of sustainability of the agrarian sector of Vinnitsa region to 2017.



Picture 9. Results of determination and forecasting of sustainability of the agrarian sector of Vinnitsa region

According to expert data sustainability of the agrarian sector of Vinnitsa region in 2014-2015 will be classified as class C - "satisfactory sustainability." In 2016-2017, the forecasting class of sustainability of the agrarian sector of the region will improve to class B - "good sustainability".

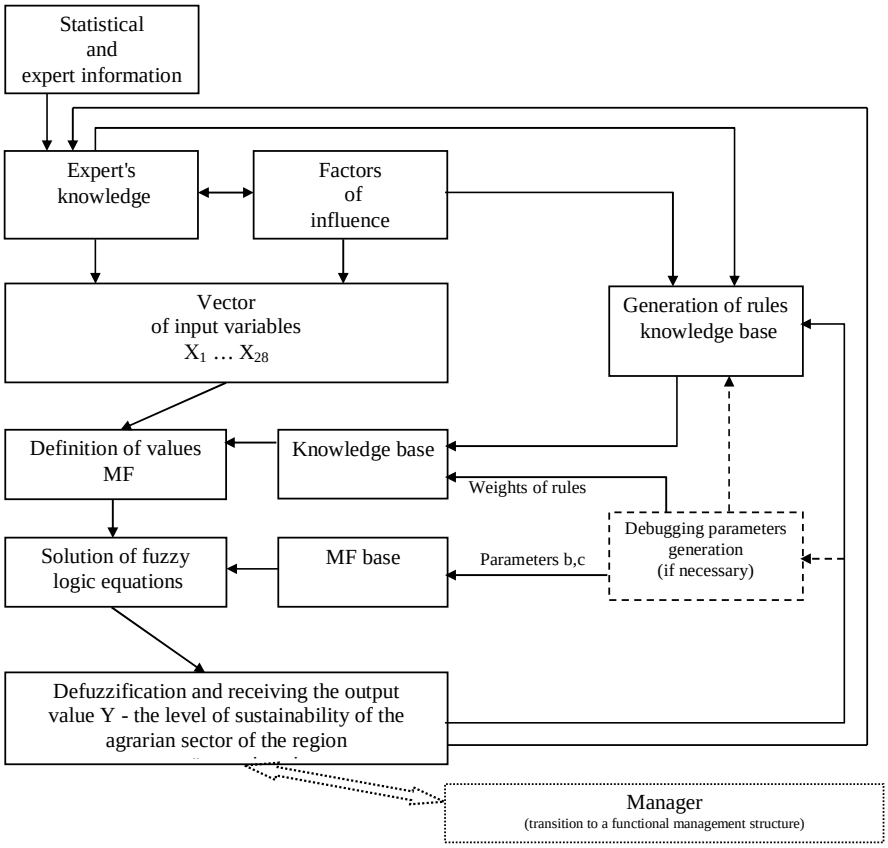
As mentioned earlier, the advantage of macroeconomic models, constructed on the basis of fuzzy logic is the ability to be used as input parameters the linguistic expressions (conclusions) of experts that largely compensate the lack of analytical dependencies between input and output parameters (variables) of prediction object.

However, the application of fuzzy logic apparatus allows to realize another advantage of this method, in particular - enables to influence the process of formation the linguistic expressions (conclusions) of experts that they do on certain issues. Models, constructed with the usage fuzzy logic, have the ability of self-learning, namely the ability to flexible rebuilding according to changes in the structure of causal relationships between input and output parameters (variables) or changes in the character of external factors [4]. This allows to construct an interactive decision support system, with regard to sustainable development of management of the agrarian sector of Vinnitsa region.

The system of decision-making and support SDMS – is an interactive automated system which, while using the appropriate models of decision-making in the agrarian market of the region, provides users with quick and efficient access to appropriate database and gives them a variety of information concerning the forecast level of sustainability of the agrarian sector of the Vinnitsa region [12].

In the database SDMS is captured and stored all the information about changes the factors of management model of sustainable development of the agrarian sector of Vinnitsa region and information about reaction of the control system to these changes (the principle of feedback) and others. The system of decision-making and support is the mechanism which helps to the forecast the level of sustainability of the agrarian sector of the region and prepare appropriate decisions in case of deviations from the desired forecast level of sustainability. Macroeconomic forecasting model of the level of sustainability of the agrarian sector of Vinnitsa region is the most difficult and the most important part of the SDMS.

Taking into consideration the foregoing decision the support system for determining the sustainability of the agrarian sector of the region it can be presented in picture 10.



Picture 10. The process of decision-making and support by using SDMS

According to experts, the process of "decision-making" in complexity and character can be compared directly with the real process of thinking. Under making decisions a single act of choosing some alternatives of their sets is understands. Among the input parameters of developed macroeconomic management model of sustainable development of the agrarian sector of Vinnitsa region are four parameters which take into account the process of human thinking. This is - reflexive parameters x_{25}-x_{28}, which reflect the result of human thinking.

Situations in which decisions are made, regarding to sustainability of agrarian sector of the region, are not always clearly defined. The main difficulties of decision making in uncertain situations lie in the inability to obtain a reliable prediction or estimation of the probability of concrete events, occurred in any given economic situation.

The developed economic-mathematical model of sustainable development management of the agrarian sector of Vinnitsa region can be considered as typical for this class of objects, and developed on its basis modeling methodology can be used for any economic process modeling, which is characterized by fuzzy connection between input and output parameters, difficulties of factors influence formalizing, possibility to attract expert's linguistic expressions (conclusions) for constructing models and so on.

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Abstract

The article highlights the main public policy measures to create a favorable investment climate in Ukraine. The authors consider the recent changes to legislation aimed to boost the investment activity. Also the article presents ratings for Ukraine conducted by the leading international financial organizations and analyses the investment attractiveness of Ukraine.

Key words: *public policy, legislation, investment, investment climate, business.*

Advances in technology have enabled the production of territory observation tools, called "geographic information systems" (GIS), each day more diverse and efficient, whether it be for assistance to driving (GPS), the management of land use, improving contingency plans for Civil Security, streamlining maintenance of public space including street furniture, as well as to improve knowledge of the cadastre as to better ensure the property to enhance the knowledge of tax bases.

In France, DATAR[1] has created an "Observatory of the territories", GIS designed as a tool for decision making support in formulating territorial policies. This original instrument was a resounding success because he was the one to bring to the entire national territory a detailed, objective and rigorous, meeting the expectations of national and local policy makers. Today, however, the development of competition between territories, as well as the emergence of competing systems, require a major overhaul of the instrument.

Publish quality information to a wide audience

The fundamental principle of the Observatory of the Territories of DATAR is to collect as much information from sources whose reliability is guaranteed, and make them available to the public without restriction.

To this end, DATAR concluded with government departments, with INSEE[2], ADEME[3], the water agencies, CITEPA[4], EUROSTAT, NATURA 2000, the AFII[5], France Initiative, INPI[6], SNCF[7] Railways of Corsica, CNAF[8], CNAM[9], the FNORS[10] the CNC[11], the FFRP[12], INRA[13], INSERM[14], the Post, the ONDRP[15], the Regional Observatory of telecommunications, TACTIS[16], OST[17], the SAFER[18], Lands Europe association and OECD conventions allowing him to obtain on an agreed rhythm, rigorous statistical information and in accordance with specifications negotiated. This information is synthesized and disseminated through two vectors: a website and a tri-annual report to present a general overview of the

[1] Interdepartmental agency for spatial planning, today changed into the General Commissariat for equality of the territories.

[2] French National Institute for statistics and economic studies.
[3] Environmental and energy management agency.
[4] Interprofessional technical center for the study on air pollution.
[5] Invest in France agency.
[6] The National Institute for Industrial Property.
[7] French National Railways company.
[8] National family allowance.
[9] National health insurance fund.
[10] National organisation of the observatories on health.
[11] National center of cinema and lively imagery.
[12] French hiking federation.
[13] National Institute for agronomic research.
[14] National institute of health and medical research.
[15] The National Observatory of delinquency and criminal responses service of the National institute of advanced studies of security and justice.
[16] The agency for deployment of information and communication technologies implementation.
[17] The Observatory for science and technology.
[18] Agency for land management and rural development.

evolution of territories along with a focus on one or more topics.

The website allows viewing statistics on maps according to the desired level and the desired perimeter. The tri-annual report is presented through a paper format in a high quality presentation.

A website that provides large amounts of information

The website offers three methods of access to information: through the selection of indicators, the selection of thematic files or thanks to a specialized research for certain "territorial stakes" territories.

The indicators are grouped into four categories: territorial dynamics, territorial cohesion, sustainable development and public policy.

Indicators of territorial dynamics cover the issues of competitiveness, attractiveness, ability to undertake and innovate, the level of education of the population, the qualification of the workforce, the quality of the environment and quality of life, safety ... They allow to observe how are balanced in France and in Europe forces of polarization and of diffusion of activities and populations, what is the impact of mobility of persons, transport goods, communications, in a context marked by the increasing globalisation of trade and openness to international competition. The web site consists of 5 sections: human development (demographics, policies for employment and their results), the Economic and Social Development (entrepreneurship, research, production by companies, income), the environment (quality of the natural environment and technological risks) and the living (housing and utilities), the opening (accessibility and attractiveness of regions) and risks (behavior of the population, including about crime, natural and technological hazards).

The access by thematic issues regards the distribution of employment by area and the characteristics of the border areas. At least, the entry on "Territories issues" carries out the specificities of the mountains and the coast.

An organization that leaves more room for the initiative to the one who seeks

Information from the observatory is presented on maps whose scope and scale is defined by the user. The information on these cards is given through indicators previously requested by the user, for example: professional activity of the 15-24 year olds, the number of people aged 75 years or more, changes in winter temperatures or items such as the scope of regional parks. Before viewing the required map, the user can read an overview of the indicator and definitions relating thereto, the sources used, the recommendations of caution in the use of data, a proposal analyzing statistics obtained, links and a bibliography. The user can download all this information, the corresponding map, but also statistical tables in different formats.

A site accessible without restriction

One of the most original aspects of the Observatory of the territories of DATAR is that all the information is available without restriction. No page, no topic is reserved for specific users with an access code.

In fact, the pages of the site are designed in such a way that the information generated may be used by everyone, including the press, and so are understandable by all without the risk of misunderstanding.

The key to success: the system of governance

Several attempts to form an Observatory of the Territories in European countries have failed because the strategic direction was entrusted to a committee chaired by a person who had all the technical skills required - usually a statistician - but did not have the sufficient political authority to mobilize all the partners, including the various relative ministries. In addition, often representatives of local authorities did not have a satisfactory representation.

The board of the Observatory of the Territories of DATAR includes 27 members representing government departments, Parliament, local authorities, the National Council for Planning, National Federation of planning agencies, and five qualified persons, and it is chaired by the Minister for spatial planning.

An indispensable tool for the conduct of spatial planning policy

The Observatory of the Territories has now become an essential instrument of any planning policy, such as the preparation, implementation and evaluation of State-project contracts, commitment of state initiatives such as the "business clusters" or rural centers of excellence, or regional or local political initiative. It is a tool for the decision making for local elected officials who are preparing initiatives for economic and social development and the attractiveness of their territory.

A tool to develop

The consideration for this success is that the Observatory of the Territories of DATAR must now evolve to meet the requirements of regional competitiveness.

Five options for reform can be identified to change the Observatory.

First, the analysis of the competitiveness of the territories should not stop at national borders. Certainly, European policies (eg 2020 strategy) are not ignored by the analysis provided; Similarly, cross-border policies are subject to a particular theme, however, it is clear that the study of regional competitiveness can no longer ignore the attractiveness of territories in the Member States and even in neighboring states of EU so great is today the business mobility.

Secondly, it is essential to strengthen the study of the attractiveness and competitiveness of the regions, knowing the causes of success or failures encountered in policies and draw all the lessons to enable local policymakers to undertake initiatives tailored to each territory.
The difficulty for obtaining recent data is often cited as a fault of the Observatory. For example, in economic terms, most of the most recent published data is from 2011, that is to say three years, but some date are from 2008, six years. Of course, the Observatory is in a situation of dependency of data providers that do not always have the technical means to publish the latest statistics; it should nonetheless seek improvements to this situation.

It may be time to consider an expansion of partnerships, not just multiply the number of partners, but to ensure that they can get more involved. While maintaining the current quality standards of the Observatory, it could be proposed to local authorities, consular chambers, AFII, or even - under certain conditions to preserve the principle of free competition - to businesses, to develop specific modules that would relate to the system of the site of the Observatory, allowing to benefit from more detailed studies on the competitiveness of certain territories.

Finally, and this is probably the most tricky proposition, the Observatory could open its columns to more critical analysis of the situation in the territories. It is generally accepted that the low competitiveness of our ports is a handicap for the development of our foreign trade and thereby, the economic development of our territories. Without transforming the Observatory into a forum for controversy, one could nevertheless imagine bolder analyzes could highlight some weaknesses in the French economic system, and thereby, help to find solutions after extensive discussion.

References:

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18. Agency for land management and rural development.

Abstract

A paper focuses on key issues of practical implementation of the strategic goals of European integration of Ukraine. The authors reviewed the status of the legal regulation of state support for agriculture, the basic obligations of Ukraine towards the EU on the development of the agricultural sector. The structure of the agricultural sector and the key development programs, features of the distribution of public funding were considered. The dynamic of the international investment activity and investment attractiveness of the agricultural sector of Ukraine were illuminated. Main factors of attractiveness of the sector that hinder its development at the present stage have been identified. There were made conclusions about the main challenges related to the European integration of Ukraine on the basis of a thorough study of Ukraine participation in the European division of labor. The obtained results determine priority actions that will improve the investment climate and the effective development of the agricultural sector.

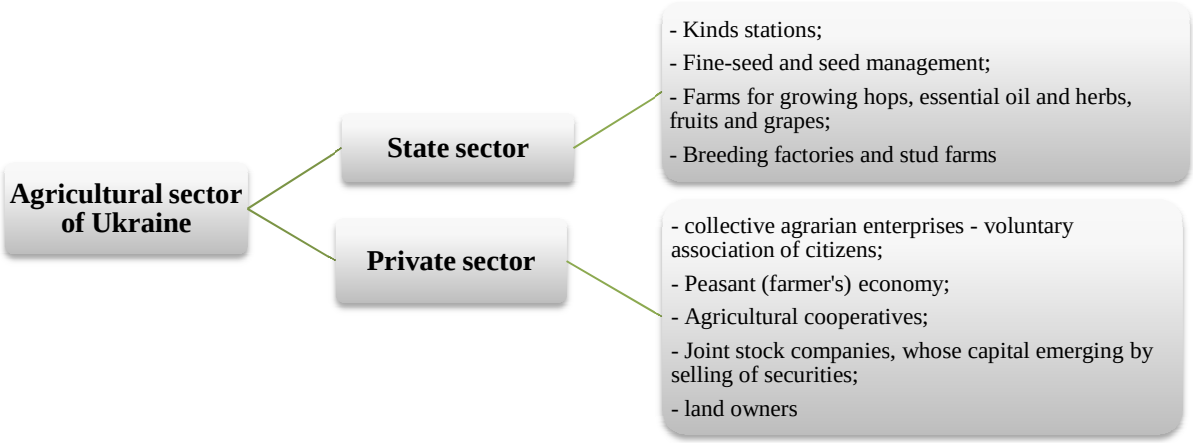
Key words: *investment climate, government spending, innovation, agriculture and European integration.*

The process of Ukraine's integration into the unified European economic space requires thorough investigation taking into consideration the conditions of difficult transformational changes in the national economy. The main tasks of the agricultural sector in the general strategy of country's social and economic development are providing food security, the increase in production volume in order to achieve high economic activities.

The ability to follow unified regulations, standards of economic policy and the norms of performance for economic entities that dominate in the unified economic space is an important factor for the country oriented at integrative development.

The structure of the agricultural sector. The agricultural sector of Ukrainian economy with its production of agricultural output contributes up to 16% of its GDP and about 60% of population's consumption fund, provides national food security and country's food independence. It has the second place among other economic sectors in terms of the export commodity composition (picture 1).

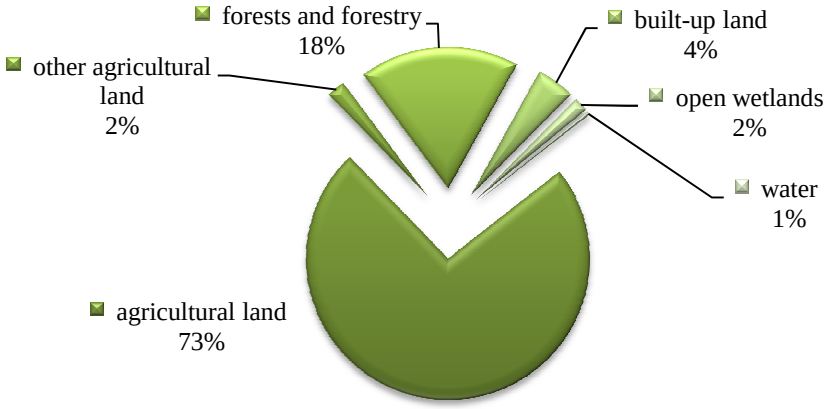
In Ukrainian commodity structure of export tendency shows mainly raw materials and basic products, accounting for 32.8% of the foreign trade turnover of Ukraine.



Picture 1. The structure of the agricultural sector of Ukraine

***Source**: composed from [12]*

The total number of small and medium sized agricultural manufacturers is about 42 thousand, they cultivate 11 million hectares of land. Among them 54% - the smallest farmers with an area of 50 hectares (picture 2). During the past, the area of agricultural land reduced by 20.9 thousand hectares, with an area arable lands has increased by 19.9 thousand hectares, but the area of fallows and pasture have undergone a considerable changes and decreased by 23.7 thousand and 14.9 hectares [1].



Picture 2. The Land Fund in Ukraine as of 01/01/2013 (in % of the total area of Ukraine)

***Source**: composed from [1]*

The main problem in a modern agriculture of the Land Fund of Ukraine is its unsustainable use [5]. Perhaps adjusting the operation of the State Land Bank may solve the current issue parcelling out of total agricultural land. One the way of solving this problem is ensuring the carrying out of works by land consolidation following commissioning their lease or perform transactions of sale and purchase of land [6], which would increase the value of land and increase of an investment component and will fill up the State Budget [1,2].

The conditions of the legal regulations for the state support of the agricultural sector. The characteristic features of Ukrainian agricultural sector in 2013 are the following: landowners reaped the record harvest of crops while there was a decrease in their prices in the world;

there were failures to register rights in rem to obtain land parcels and lease agreements; three big agricultural companies issued Eurobonds for hundreds million dollars; international agencies gave Ukrainian companies lower ratings; there was a decrease in country's support of the industry.

To provide the conditions for positive development dynamics the Ukrainian government supports the agricultural sector according to 16 main budget programmes that cover all business activities of agricultural enterprises including providing zero-interest loans to farm enterprises, the reduction in cost for bank loans and insurance premiums, providing financial support in buying home-produced agricultural equipment. The main of them are the following:

2013-2014 Annual Program of Economic Development provides the acceleration modernization and construction of agricultural enterprises. During 2013 all regions Ukraine have already begun to operate 92 new agricultural facilities. It enabled the industry to involve 5.4 billion UAH investment. Thanks to the commissioning of new capacities it has managed to create 4.8 thousand new jobs.

The Programme of Agricultural Industry Development until the year 2020 directed on forming an effective, socially oriented agricultural sector, which should meet the requirements of internal market and a leading position in the world, based on its stratification and priorities support to businesses [7].

The State Special-Purpose Programme on the Development of Ukrainian Countryside until the year 2015. In order to ensure sustainability of agriculture, competitiveness on the domestic and foreign markets, ensuring food security, preserving Ukrainian peasantry as a carrier of the identity, culture and spirituality [3,4].

The State Special-Purpose Sustainability Programme of Ukrainian Countryside until the year 2020 determining mechanisms of development, implementation, monitoring and evaluation of local development strategies aimed at development of rural areas, based on the priorities of Ukraine in the conditions of the agreement the Association with the EU.

Tax policy. The year 2014 features the accumulation of VAT funds, fixed agricultural tax and processing companies' transferring VAT funds to a special fund of Ukraine's state budget and to special accounts to pay compensation to agricultural producers for sold milk and meat.

The process of approximation of legislation within the framework of Free Trade Area and improve the quality of its implementation will contribute the improvement business environment in Ukraine. Ukraine should meet all requirements about the conditions operating in the Free Trade Area to improve the investment climate: on liberalization of trade in goods based on the agreed regulations in accordance with customs procedures and treatments of origin, standards, technical regulations and conformity assessment, sanitary and phytosanitary measures, intellectual property rights protection, and so on [15].

With aim of unilateral decreasing or cancelling EU customs duties for the goods that produced in Ukraine the European Union is going to unilaterally grant Ukraine autonomous trade preferences on March 11, 2014. The application of the above mentioned privileges will last from May 2014 till 1 November 2014. By November 2014 the parties expect that they will have signed the rest of the Treaty stipulations, all the necessary domestic procedures will have been completed and the implementation of the trade stipulations in the Treaty will have begun.

The above-mentioned fruitful cooperation led to the beginning of the "Dialogue between Ukraine and the European Union" on agricultural issues among which are the current problems of the agricultural sector and the development of agricultural areas (management, the current trends in the crops and meat markets, the reforms in the agricultural sector, the opportunities for the development of rural areas).

Government policy is already provided domestic exporters access to the European market for some goods, in particular on products of animal origin. Standing Committee on the Food Chain and Animal Health (SCOFCAH) General Directorate of the European Commission in 2013 decided to include Ukraine on the list of producers which fulfilled the requirements of the EU and be eligible to supply the European market products of poultry, fish, marine (not for human consumption), honey, meat of wild birds, eggs and egg products.

Since February 20, 2013 Ukraine received the right to supply products to the EU poultry industry, which was possible due the efforts of the consolidated government and businesses directed at opening the European market for domestic agricultural products.

Nearing completion is agreement to permits for export of poultry, while work regarding the implementation of the requirements and permission for export of milk is still ongoing. To speed up a final permit to export these products to the market member states, Ukraine must fulfill requirements that require investments not only significant structural changes but also money (table 1).

Ongoing successful steps in this direction: on December 2013 were harmonized the 7064 national standards with international and European standards and technical regulations 41, based on the legislation of the EU, 29 of which have already been implemented [13].

Moreover, large-scale measures are taken connected with the preparation of the domestic market for the cooperation within the Free Trade Area between Ukraine and the EU. To achieve the above-mentioned aim in 2011 the Cabinet of Ministers of Ukraine passed an order to resolve "the Plan of actions concerning the increase of advantages and the minimization of the negative consequences of creating with the European Union and for the Ukrainian economy" № 548-r [17].

There is a tendency of increase in exports to the EU agricultural commodities and products: grain exports increased by 92% to $949.9 million and seed exports by 33.5% or $308.0 million [8].

Table 1.

Ukraine's obligations to the EU concerning the agricultural sector of economy under the conditions of autonomous preferential trade regime of the EU for Ukraine

Condition	*Description*
EU import duty rates	Beginning with the introduction of autonomous trade preferences, EU import duty rates are set at a level that should act in the first year after the start of free trade between Ukraine and the EU (the corresponding EU import duty rates). The negotiations between Ukraine and the EU were over in 2011. The diagrams of cancelling EU import duty rates was set based on customs tariff fixed according to the Harmonized Commodity Description and Coding System (HS), 2007 version. The customs tariff based on HS 2012 version has been implemented since January 1, 2012. That is why there might be some differences between the codes of diagrams for cancelling EU import duty rates and for the current EU customs tariffs. The sum of export duty rates set for the EU according to the diagram for a particular year and the sum of additional fees for sunflower seeds should not exceed 100% from the sum of export duty set for other countries.
Tariff quotas	Ukrainian producers have received an opportunity to import certain volumes of the above mentioned goods without paying import duty. It is worth noting that it is not aimed at limiting import volumes, as the import of these goods beyond the fixed volume will be conducted according to the general import regulations, namely it will be taxed under the same conditions that are currently in force for Ukraine.
The rules of origin EU	The reason for the application of trade preferences to goods should be Certificate of Origin (CvO) at the same time following the rules about origin of goods according to the European Commission regulation № 2454/93 that brings into action implementation articles of EU customs code (EU regulation №2913/92). As soon as the trade regulations of the Agreement on association begin to be temporary implemented, the rules of origin stipulated by the Agreement will be enforced. EUR.1 certificates will be issued by the Chamber of Commerce and Industry of Ukraine and its regional offices while preferential trade regime is in force.
Taxation regime for agriculture	The main principles and procedures of VAT taxation in Ukraine satisfy the EU requirements. However, the current special VAT usage and zero-rate VAT, which have to be cancelled for the unification of taxation systems, do not meet the EU requirements. A reduced tax rate that pays for the tax loan should be introduced instead
Subsidies	The Agreement on association presupposes cancelling export subsidies when importing goods and selling them in Ukraine, that is, home products acquire an opportunity to compete with foreign manufacturers in the domestic market.

***Source**: composed from [9,16]*

Ministry of Agrarian Policy and Food of Ukraine expanding collaboration with the General Directorate of the European Commission's "Agriculture and rural development" within the Memorandum of Understanding for dialogue on agricultural issues for the following areas of cooperation:

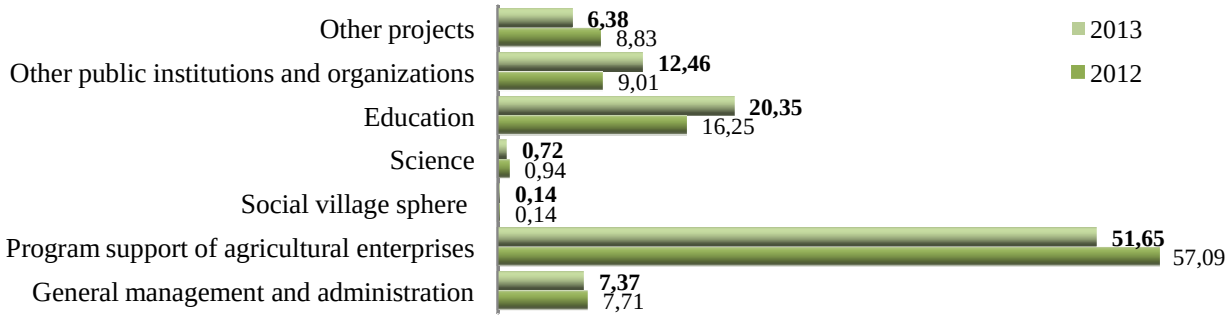
- Exchange of information on agricultural production and trade experience in the development and implementation of policy in the field of agriculture and rural development, as well as laws and regulations;
- Discussion about new technologies related to agricultural development;
- Exchange of ideas, trying to approach on the quality policy (except for food safety) of agricultural products, including the geographic labels and organic production;
- Harmonization Ukraine's positions with EU on issues that are the responsibility of international organizations [13].

The EU membership would be impossible tomorrow, but the availability of European integration policy provides a guide for Ukraine's economic and social changes appropriate commitment and consistency. Consequently, the European integration course of Ukraine - is primarily a set of tasks on which Ukraine should work.

The tasks for Ukraine's negotiations over Agreements with EU:

– Abolition anti-dumping of measures to Ukrainian producers and prevent new anti-dumping sanctions;
– Ensuring the legal protection of Ukrainian companies on the EU market;
– Creation of a single regulatory framework of trade with the EU;
– Implementation of common investment projects with the EU investments in strategic industries of Ukrainian economy;
– Setting up the technology parks, business incubators and other forms of innovation activities in depressed areas around the perimeter of border of Ukraine and the European Union, using scientific and technological potential of research and universities of the border regions of Poland, Romania, Slovakia, and Hungary;
– Supported by economic diplomacy setting up the Ukrainian consortia and alliances with powerful companies of the EU;
– Dissemination of information on investment needs and opportunities in the Ukrainian agricultural manufacturing, providing information and guidance and legal support of investment from the EU in Ukrainian agriculture;
– Formation of mutual investment protection and combating unfair competition from representatives of both partner countries well as of third countries [9].

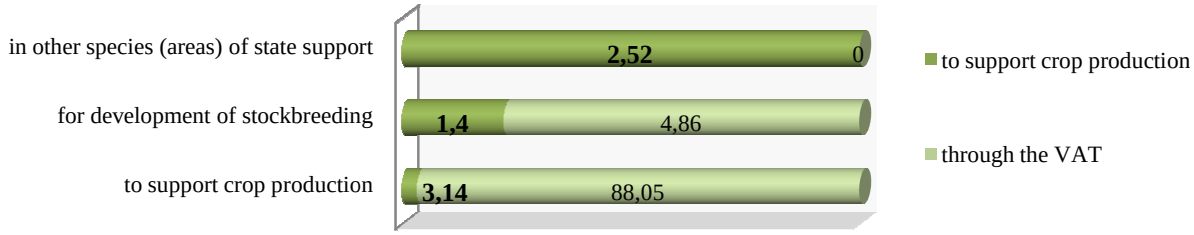
Agribusiness state support fund. In 2013 agricultural manufacturers in comparison to the previous year have received 51.8% less income from operations (12.5 bln in 2013 against 24.1 bln in 2012). In order to support of agricultural production according to preliminary data, in 2013 the accounts of agricultural enterprises (except small) actually received 391.9 million. direct budget subsidies and 6494.8 million. through the VAT (picture 3) [3].



Picture 3. Ministry of Agrarian Policy and Food of Ukraine Base Spending
(in % of state support funds, 2012)

***Source**: composed from [10]*

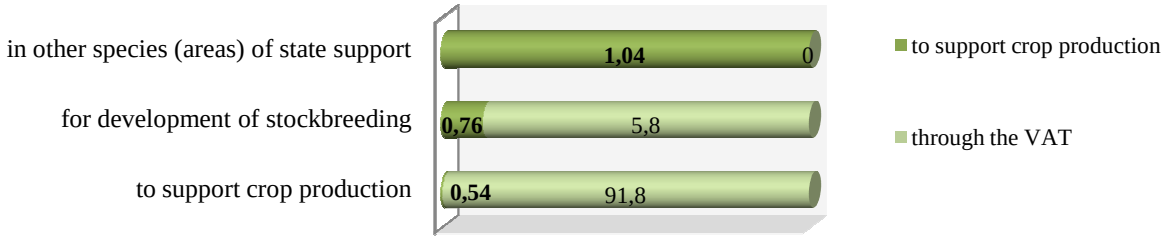
During January and February 2014 index of agricultural production over the corresponding period in 2013 amounted to 106.3%, including agricultural enterprises - 111.6% in households - 101.1% (picture 4,5). According to the Ministry of Agrarian Policy and Food of Ukraine in 2013 agricultural producers produced more by 18.4% compared with the same period of 2012 (in animal growth reached 1.8% in crop - 7.2%).



Picture 4. State support fund of farms (in %, of the total amount of state support funds, 2012)

Source: *composed from [11]*

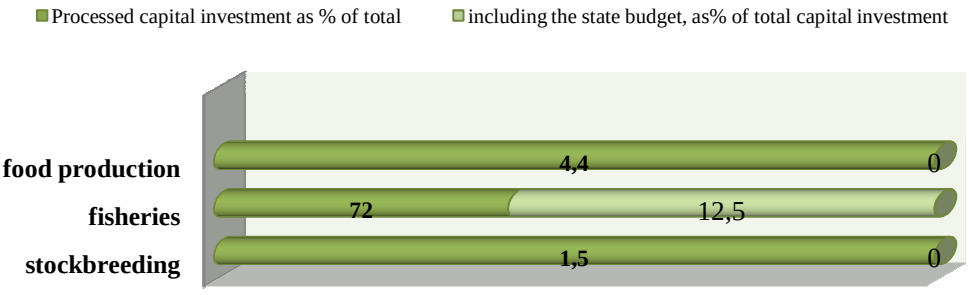
Average selling prices of agricultural products in all fields sales for January-February 2014 compared with the same period in 2013 decreased by 7.8%, including crop production - by 18.9%, stockbreeding - increased by 3.4%. In February compared to January, the average prices of agricultural products rose by 9.7%, including crop production - by 12.3%, stockbreeding - by 3.9%.



Picture 5. State support fund of large farms (in %, of the total amount of state support funds, 2012)

Source: *composed from [11]*

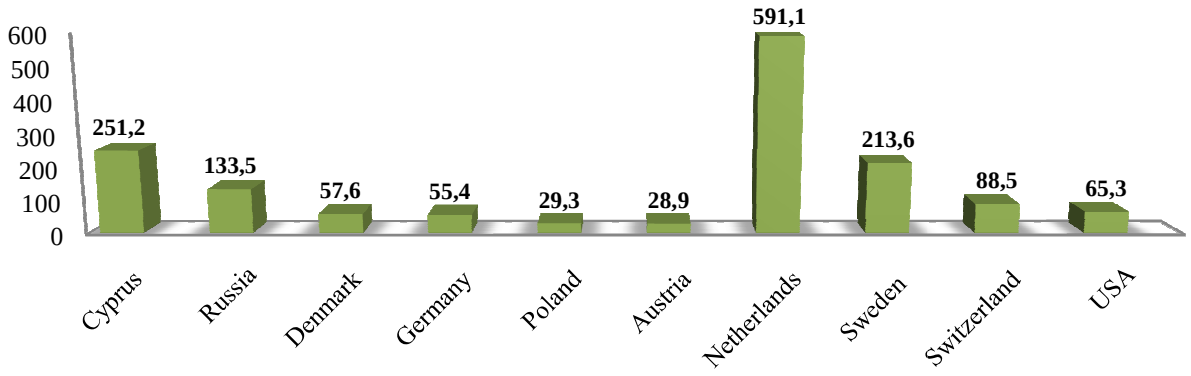
Investments. It should be noted that the government failed to attract the projected about $3 billion investment in the agricultural sector. Foreign direct investments in agriculture and food during nine months of 2013 amounted to only $272 million (picture 6). As of 1st January this year, foreign investment in the agricultural sector of Ukraine amounted to 685.3 mln. USA. The share of foreign investment in agriculture is 1.4% of the total. During the first nine months of 2013 amounted to only $ 272 million - in agriculture and food production.



Picture 6. Foreign Direct Investment in Domestic Economic Activity (January-December, 2013)

Source*: composed from [11]*

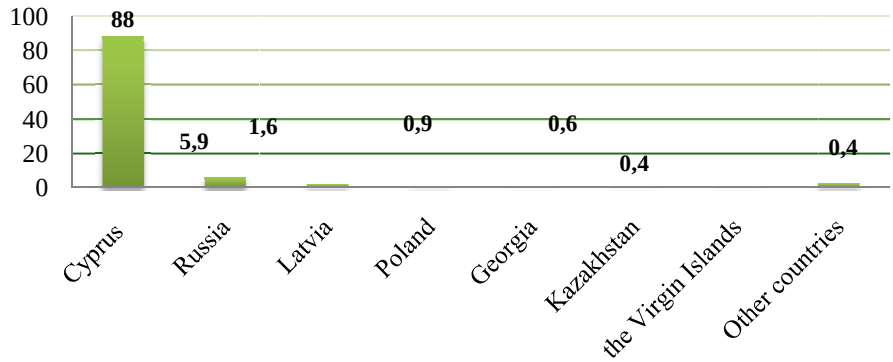
Main investors in the agroindustrial complex of Ukraine, particularly in agriculture, are Cyprus ($251.2 million), United Kingdom ($133.5 million), Denmark ($57.6 million), Germany ($55.4 million) Poland ($29.3 million), Austria ($28.9 million). Serious investment in domestic food production came from the Netherlands ($591.1 million), Sweden ($213.6 million), United States ($65.3 million) and Switzerland ($ 88.5 million) (Picture 7,8).



Picture 7. Foreign direct investments in agriculture of Ukraine, 2013 (millions of U.S. dollars)

Source: *composed from [12]*

Data on direct investments from Ukraine are preliminary and used the National Bank of Ukraine for the balance of payments and international investment position.



Picture 8. Direct investments (equity) from Ukraine in the world economy, in %

Source: *composed from [11,12]*

Investment disparity effected on the state development of regional labor markets. The largest volume of foreign investment to enterprises in Donetsk - 54.7% of the total; Kharkiv - 87.5% in Krivoy Rog - 64.7% of total foreign direct investment. Probably that's because of high concentration of industry in these regions. Poor diversification of foreign direct investment in Ukraine by EU investors could make a risk of depending Ukraine's economy of several countries - major investors.

Since implementation of the Common Initiative in 2011, the EBRD has provided more than $300 million for the companies in the Ukrainian grain sector with additional mobilization of more than $800 million in private investment.

In general 2015 planned to commissioning 312 new agro-industrial objects with 32 thousands of workplaces. This will provide an opportunity to involve in the agricultural sector of almost $30 billion investment [13].

The important event in 2013 was the launch of Eurobonds the three great Ukrainian agricultural companies that have managed to to involve significant funding (table 2). The

"Myronivskyi Khliboprodukt" - issue of securities by $ 400 million (after redemption of Eurobonds worth $350 million) maturing in 2020; "Mriya Agro Holding" - volume of $222 million (after redemption of Eurobonds worth $178 million) maturing in 2018; "UkrLendFarminh" - the volume of $500 million, maturing in 2018 [8].

Investment attractiveness. According to the Ukrainian National Information Agency "Ukrinform" investors are interested to invest in agriculture: food, bioenergy crop production and high-yield companies, the ability to export high rates of economies of scale and better conditions liquidity of investment [14].

Creation of Free Trade Area with the European Union become a powerful an extra argument in favor of foreign direct investment in the production of goods and services focused on exports to the EU, using existing competitive advantages Ukrainian economy.

Ukraine is ready for the extended and mutually beneficial cooperation. And we have set this aim not empty-handed but with big volumes of production that can be beneficial for the world community. Nowadays it is of high importance to resume distributing effective subsidies for agricultural manufacturers, which does not require any expenses from the state budget and to take the necessary measures in order to provide the conditions for exporting goods to the EU.

Creating a single integrated supervisory authority and laboratories certified in EU that will be accredited by both in the EU and Ukraine, the abolition specifications and ISO recommendation status (National Standards of Ukraine), establishing European standards of quality to ensure a unified approach to production in Ukraine and EU.

Nowadays economic risks for financial institutions are still rather high. However, agricultural business is still developing. The sowing campaign is in progress and in some regions it began even several weeks earlier than had been planned. Ukrainian agricultural producers have large-scale plans for the current season. They are going to export 33 million tons of grain this year, not mention to the other crops. Thus, Ukrainian investors have a big choice but they finance only big manufacturers. It has been estimated that Ukrainian investors cover only one third of the market.

Table 2.

Capitalization of Ukrainian agricultural sector as of March 2014

Company	Exchange	Currency	Purchase Price	Sale price	Market Cap, mln $
Myronivskyi Khliboprodukt	London	USD	14,20	14,37	1518
Mriya Agro Holding	Frankfurt	EUR	5,07	5,32	745
Kernel Holding	Varshava	PLN	26,05	26,08	689
Avangardco	London	USD	8,80	8,85	565
Astarta Holding	Varshava	PLN	45,20	45,89	377
Ovostart	Varshava	PLN	67,00	68,00	135
Industrial Milk Company	Varshava	PLN	8,83	9,07	92
Milkiland	Varshava	PLN	8,60	8,75	91
KSG Agro	Varshava	PLN	6,80	6,84	34
Agroton	Varshava	PLN	4,56	4,60	33
Agroliga	Varshava	PLN	22,01	22,80	12
Ukrproduct	London	GBP	7,00	8,00	3

Source: *composed from [14,15]*

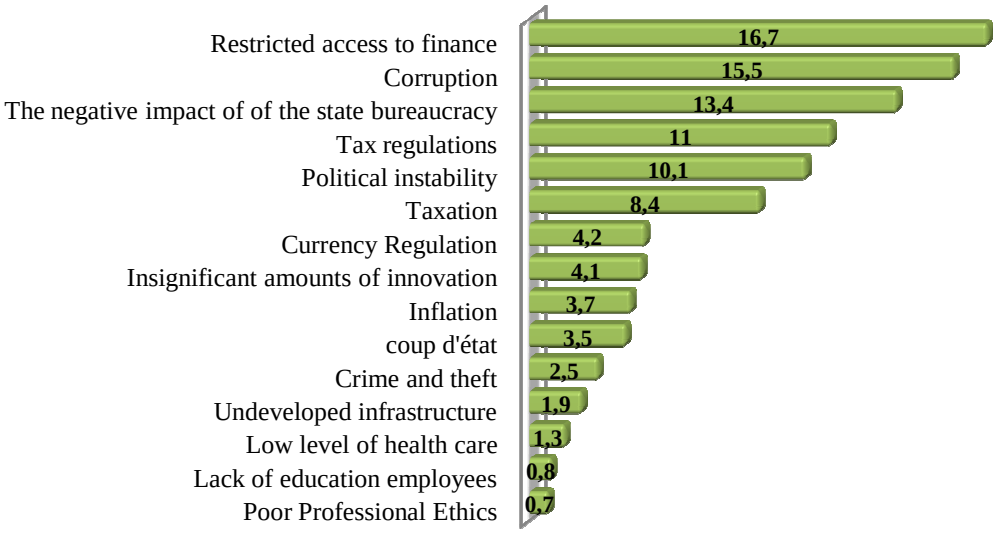
Entrepreneurial cooperation with foreign investors is inevitable and it is becoming more and more popular in the agricultural sector of Ukraine. It is necessary for a number of reasons. First of all, food industry crisis has to be urgently defused and the prerequisites for the further development of the agricultural complex should be created. Secondly, more and more managers of enterprises and other agricultural institutions, farmers, administrative bodies realise that it is either impossible, or extremely slow to grow enterprises to the next level without

attracting foreign investors. Thirdly, investors from other countries are becoming more and more interested in the mutual cooperation as they seek for opportunities for effective investments and the implementation of latest technological solutions in the Ukrainian agriculture.

Moreover, Ukraine is oriented at foreign investment attracting into different industries including food manufacturing. Furthermore, it has the necessary legislative framework. Despite its imperfection, it still gives plenty of opportunities to widen and intensify mutually beneficial connections with foreign partners, for example, setting up joint-ventures together.

Consistently higher is the investment attractiveness of Kyiv and industrially developed regions of Ukraine. As of December 31, 2012 the share capital in the total foreign direct investment amounted to 48.8% of the Dnipropetrovsk region. - 15,3% of Donetsk - 5,5%, Kharkiv - 4.0%. Among the outsiders were Chernihiv - 0.2%, Kirovohrad - 0.2%, Ternopil - 0.1%, Chernivtsi - 0.1% of the area (picture 9).

Following the results of World Bank "Doing Business-2014" Ukraine has risen to 28 positions compared to the "Doing Business-2013" and ranked 112th place**.**



Picture 9. The most problematic factors for doing business in Ukraine 2013-2014 (in%, in substance exposure)

Source*: composed from [16]*

The worst records include the impact of bureaucracy, corruption and tax policy for business development and investment, trust to politicians, of law enforcement agencies and the judiciary, road quality, durability of banks protection material and intellectual property rights. The best the state of affairs in the country covering public education, teaching quality natural sciences and mathematics, the level of development of the railroad and the market volume.

But over time, the quality of educational services and the level of national science significantly have decrease, this trend is due to the lack of implementation of high technologies in production and science funding at an appropriate level.

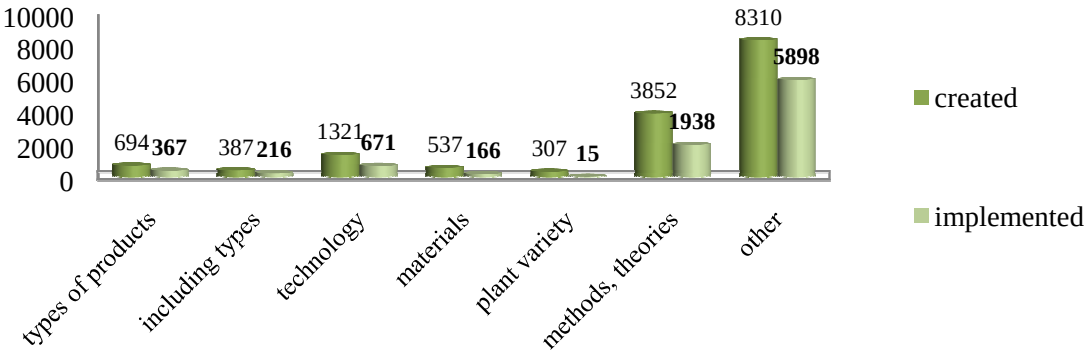
The agricultural sector is traced weak link of industrial and research institutions regarding consulting and transfer of technological experience. Nowadays industrial manufacturers have no need to risk the funds because of lack free tools.

Ukraine has the largest share of the budget accounts for the following strategic priorities for innovation – "Technological modernization and development of agriculture". Main Directions of Budget allocations for science, for analysis are:

- Fundamental research (including by grants from the State Fund basic research);
- Applied research and development;
- State targeted research scientific technical programs and research parts of the national target programs;
- Development of new technologies essential for public order;
- Programs and projects in the field of international scientific and technical cooperation;

– Financial support for the development of scientific infrastructure and upgrades
– Material and technical base;
– Other areas of financial support from the sphere of scientific and technological activities.

Almost of all new technologies (934 pcs. that is 20,579.80 thous. UAH) passed on Ukraine's internal market by the National Academy of Agricultural Sciences, which is a holder of this technologies, including 920 units (20497.9 thous. UAH). Unfortunately this institution do not working in the interests of society and the state. Due to the special fund of the state budget established 5562 scientific and technical products (STP) units, of which 67.7% - has already implemented (picture 10).



Picture 10. General Fund Allocation and implemented researches by Product Groups of STP units, 2012

***Source**: composed from [11]*

Using the experience and the financial resources from the European Union will, consequently, lead to building goods marking and certification system that will highlight the national identity of Ukrainian producers' goods in the home and international markets. It will also result in establishing a good reputation for Ukraine as high quality products manufacturer, and in the increased competitiveness of Ukrainian goods.

The European Union regulations that will enable mutual cooperation between Ukraine and the EU will play an important role for Ukrainian exporters to the EU countries. By the stipulations of the Treaty, the regulations on the capital and payment flow ensures free capital flow that is connected with direct investments conducted following Ukrainian legislation as well as the capital flow involved into trade loans.

Implementation of the Treaty will also strengthen relations in trade, environment and social policies and practices to further the objectives of promoting the expansion of trade between Ukraine and the EU, accounting and mutual economic, social and environmental interests in the development of state and society.

The main forms of the foreign direct investment in agriculture of Ukraine are the establishment of joint or their subsidiaries; concluding licensing agreements with domestic households, according to which the right to acquire the latest new technology of production of the goods; acquisition of minority shareholdings of domestic companies - issuers (foreign portfolio investment), or buying controlling stakes in domestic companies (direct purchase, in the privatization process, the exchange of debt for shares, etc.).

- Increased the competition from EU companies in the Ukraine's domestic market;
- Insolvency of uncompetitive enterprises;
- Increasing the expenditures of Ukrainian enterprises adjusting to EU standards and rules (standards of food safety directive REACH, etc.);
- Increased spending for adaptation of Ukraine with the EU legislation;
- Consolidate the dominance of raw and low-tech products in the structure of merchandise exports Ukraine;
- The growth of negative balance of trade between Ukraine and the EU.

It should take into consideration that at the moment there are a number of barriers that complicating the negotiation process, including:

- The lack of coordinated positions of government and business groups of Ukraine in negotiations;

- Excessive mystery of negotiations from Ukrainian side;
- Lack of legal support for Ukrainian companies and business associations;
- Limited of financial and resource support for negotiation process (South Korea, the population of which is the same as in Ukraine, involves negotiating an FTA with the EU, five times more professionals than Ukraine);
- Training of unqualified tariff offers (some rates that managed to defend Ukraine in the negotiations on accession to the WTO, were either too high (30% for sunflower oil) or unnecessary (duty on imports of yogurt from Europe, where 99% of them are imported from Russia). The negotiations on the FTA Ukraine and the EU have decided on a consolidated tariff proposals (table 3).

Table 3.

Investment project selection criteria for state support in Ukraine

total estimated cost	• should exceed amount equivalent: • 3 million euros - for large business entities • 1 million euros - for medium business entities • 500 thousand euro - for small businesses
number of created workplaces	• should exceed: • 150 - great for business enterprise • 50 - to medium business entities • 25 - for small businesses
Average wage	• *at least 2.5 times higher than minimum wages*

***Source**: composed from [18]*

Requirements for investment projects in priority sectors [18]:

- In the priority sectors of the economy (Resolution of the Cabinet of Ministers of Ukraine № 843-r agriculture: production, storage of food, including baby food and biofuels, with a focus on import substitution);
- The newly established or existing enterprises, which will be the reconstruction or modernization;
- The selection of a structural subdivision, where the implementation of the project;
- The achievement of within two years from the date of state registration of investment projects in priority sectors of the economy indicators established by Article 4 of the Ukraine "On stimulate investment in priority sectors of the economy to create new workplaces".

To conclude, it is worth mentioning that the agricultural sector of Ukraine is the most investment-attractive compared to other industries of the economy due to its institutional security, one third of the world resources of fertile soil, highly skilled human capital, existing industry infrastructure, far-reaching network of innovation centres, government support, flexible policies as far as foreign investments are concerned.

Successive practical steps towards joining the European community and the Free Trade Area will help position Ukraine as a democratic, economically developed country of the European Union.

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Abstract

This article describes a regional development project based on the concept of cluster (otherwise named "pôle de compétitivité" in French) centered on the activities linked to leisure horse riding. The said project cluster ought to be developed in the French capital region as an initiative and with the support of InterRegioNovation and classically involves enterprises, education and vocational training, research combined together with the key factors of innovation, partnership, and international visibility/development.

Key words: *regional development project, cluster, pôle de compétitivité, leisure horse riding, InterRegioNovation, innovation, international visibility, international development*

Résumé

Cet article décrit un projet de développement régional fonde sur la notion de pôle de compétitivité (ou "cluster" en anglais) centre sur les activités liées a l'équitation de loisir. Ce projet devrait être développé dans la région capitale française en tant qu'initiative et avec le soutien d'InterRegioNovation et implique classiquement entreprises, éducation et formation, recherche combines aux facteurs clés que sont l'innovation, le partenariat, et une visibilité/développement internationaux.

Mots-clés: *projet de développement régional, pôle de compétitivité, cluster, équitation de loisirs, InterRegioNovation, innovation, visibilité internationale, développement international*

UTHIPPIA est un **pôle de compétitivité** centré sur le thème du cheval de loisir.

Le cheval de loisir est le support et le fil conducteur de ce **projet de développement territorial** dans le cadre d'une **approche holistique**. Il part du constat d'**une activité déjà très développée** en France et dans le monde, déjà organisée et en forte croissance, mais **dont les potentialités ne sont pas toutes exploitées** ou pas encore exploitées avec rationalité. Il constate également que le seul pôle de compétitivité équestre existant, Hippolia, consiste plus en un *réseau d'acteurs dispersés* et orientés sur la *pratique sportive professionnelle* qu'en un véritable regroupement géographique susceptible de créer les synergies utiles aux progrès de la filière. Il vise à *regrouper géographiquement des activités* de pratique équestre, de recherche et de soins, de formation et d'emploi, d'éducation et d'intégration, de tourisme et d'amélioration et de commercialisation des accessoires. Il se veut une vitrine et un laboratoire de la cité idéale du cheval de loisirs, qu'il entend concrétiser en une sorte d'utopie futuriste réalisée. D'où le nom proposé d'Uthippia, du Grec Hippos, cheval, et de Utopia – référence à l'œuvre de Thomas More -, mais référence indirecte également à l'architecte antique Hippodomos, l'un des premiers concepteurs de cités idéales, créateur du port d'Athènes et des cités rationalisées en damier.

Articulé autour d'une écurie de pratiquants équestres de loisir, le pôle doit à la fois:

1) *assurer son propre développement* par le jeu des interactions positives entre ses différents **pôles de compétence,**
2) *soutenir le développement durable, intelligent et inclusif de sa région d'implantation* par l'encouragement et l'innervation des activités locales connexes ou subséquentes: emploi direct, sous-traitance et fournisseurs, innovation, tourisme, services, consommation, économies d'eau et d'énergie, conservation des paysages et entretien de l'espace rural, éducation et inclusion sociale [1],
3) *participer au développement des zones partenaires* à travers l'Europe et/ou le monde.

Il participe à la réalisation des cinq objectifs concomitants de la stratégie Europe 2020: emploi, innovation, éducation, inclusion sociale et énergie/lutte contre le changement climatique.

Ses principaux pôles de compétence constitutifs initiaux pourront être ultérieurement complétés de toute forme d'activité connexe susceptible d'interagir avec les autres éléments du pôle de compétitivité.

Cependant la base et la planification initiales s'articuleront autour des éléments suivants (chaque élément constitue un pôle de compétence et leur ensemble constitue le pôle de compétitivité) :

1) **une écurie de loisirs modèle**, intelligente, durable et inclusive;
2) un centre éducatif et ré éducationnel;
3) **un centre international de recherche et de formation aux soins du cheval**, tendant notamment à la formation et/ou à la délivrance de diplômes de dentiste et d'ostéopathe équins, ainsi qu'à la formation de soigneurs équins et de maréchaux-ferrants;
4) un centre de formation à la gestion et à la promotion des activités équestres;
5) **un pôle international de recherche et de conseil juridiques** relatif aux activités équestres;
6) un relais et un centre de développement de «poste de loisirs»;
7) **une agence d'emploi spécialisée** dans les activités équestres et para-équestres;
8) **un centre commercial et un centre de recherche spécialisé** dans les accessoires pour activités équestres de loisir;
9) **un pôle logistique et services** assurant la mise à disposition et la gestion des installations nécessaires aux pôles opérationnels.

La réussite des objectifs de développement interne et externe repose notamment sur les éléments suivants:

– Innovation;
– Internationalisme;
– Synergies internes;
– Synergies externes;
– Espaces physiques adaptés;
– Sublimation de l'espace en flux électroniques.

Ces éléments de réussite doivent être réunis globalement et dans chaque pôle de compétence.

Plan du dossier :

1/ présentation courte/résumé (pages 1 et 2)
2/ description sommaire

- **Principaux éléments constitutifs**
  - écurie de loisirs modèle
  - centre éducatif et ré éducationnel
  - centre international de recherche et de formation aux soins du cheval
  - centre de formation à la gestion et à la promotion des activités équestres
  - pôle international de recherche et de conseil juridique
  - relais et centre de développement de « poste de loisirs »
  - agence d'emploi spécialisée
  - centre commercial et de recherche spécialisée dans les accessoires
  - pôle logistique et services
- effets attendus
- pré requis physiques
- étapes du développement du projet
- budget - financement

3/ analyses détaillées.
- Environnement – marché – pré-localisation - impact
- Les partenariats à développer/ les structures juridiques
- Eléments techniques

PRINCIPAUX ELEMENTS CONSTITUTIFS DE CHAQUE POLE DE COMPETENCE:

1/ Ecurie de loisirs modèle, intelligente, durable et inclusive

- Ecurie mixte club et propriétaires d'une centaine de chevaux initialement, extensible à 200, non compris les boxes de passage pour les manifestations exceptionnelles.

- Cœur et support du projet, cette écurie a vocation à servir de centre d'expérimentation et de mise en œuvre pour les innovations mises au point ou intégrées par les autres pôles de compétence.
- Enseignement et pratique des principaux sports équestres aux niveaux club et amateur (CSO – Dressage – CCE – Hunter etc. Eventuellement autres disciplines selon opportunités ou demande: voltige, attelage, trek etc.).
- Rationalisation poussée et innovatrice de la construction, de la disposition, de l'entretien, des soins (choix des matériaux, énergie solaire, recyclage eau, nettoyage, distribution centralisée de la nourriture, surveillance visuelle et biochimique, bioénergie, etc.).
- Modularité permettant adaptation à l'évolution du volume d'activité et de pensionnaires.
- Bien-être et confort du cheval (paddocks individuels, paddocks collectifs, liberté de mouvement, régime alimentaire étudié en lien avec le pôle de soins etc.).
- Base pour expérimentations et recherches du pole soins (fourniture de populations cibles et témoins).

2/ **Un centre éducatif et ré éducationnel**

- Cycles pédagogiques en synergie avec environnement scolaire;
- Equithérapie en synergie avec établissements de soins et de suite des populations en situation de handicap léger ou lourd.

Le centre s'appuie notamment sur la cavalerie de club du pôle central et sur le réseau scolaire et éducatif environnant pour offrir une gamme d'activités pédagogiques scolaires ou périscolaires en concertation avec les autorités pédagogiques et territoriales locales.

Il organise également, propose et mène des recherches appliquées en matière d'équithérapie sur la base des partenariats à construire avec les établissements de rééducation et de recherche spécialisés.

3/ **Un centre international de recherche et de formation aux soins du cheval**, tendant notamment à la formation et/ou à la délivrance de diplômes de dentiste et d'ostéopathe équins, ainsi qu'à la formation de soigneurs équins et de maréchaux-ferrants:

- Formation aux métiers d'avenir en France ou dans le monde, notamment dentiste équin et ostéopathe, en liaison avec les écoles belge et britannique existantes
- Création à terme d'un diplôme français et/ou international pour ces deux spécialités
- Développement d'une filière de soigneur équin
- Développement d'une formation de soins du pied et de l'appareil locomoteur bas (maréchal-ferrant notamment)
- Eventuellement création formation d'une activité de formation à la bourrellerie orthopédique

4/ **Un centre de formation à la gestion et à la promotion des activités équestres:**

- Initiation à la gestion et perfectionnement des dirigeants de clubs ou de structure équestre, mettant l'accent sur l'environnement du cheval et des élèves : gestion client, communication, emploi des techniques modernes de communication et de gestion (sites internet, réseaux sociaux, prospection, gestion des fichiers, comptabilité et des flux par informatique)
- Le niveau de formation et son contenu auront vocation à être définis si possible en partenariat avec l'université de Dijon qui a créé le seul diplôme de niveau master existant en ce domaine; connexion avec formations similaires à l'étranger le cas échéant.
- Interactions avec le pôle de recherche et de conseil juridique

5/ **Un pôle international de recherche et de conseil juridique** relatif aux activités équestres

- Recherche et recensement des règles applicables à l'activité équestre
- Rédaction d'un « code de l'équitation » regroupant en un seul manuel l'ensemble des règles applicables au cheval
- Conseil juridique spécialisé
- Formation et télé-formation
- Activités et contenus à définir avec des spécialistes français et étrangers de la profession et une ou plusieurs universités françaises ou étrangères.

6/ «Equilib'», un relais et un centre de développement de « poste de loisirs »

Création d'un réseau équiroute trans-européen (hypothèses de travail initial: pèlerinage de Saint-Jacques de Compostelle – route Balzac – route Charlemagne – route d'Artagnan – eurovéloroutes 2, 4 et 6) permettant la randonnée équestre sur longue distance par la location de chevaux par étape associée à des solutions d'hébergement des chevaux et des cavaliers (hôtellerie gérée à part au niveau de la zone, dans le cadre du pôle logistique).

7/ Une agence d'emploi spécialisée dans les activités équestres et para-équestres

A organiser en synergie et en partenariat avec «équi-ressources», l'agence nationale pour l'emploi dans la filière équestre basée dans l'Orne, soit par partenariat (répartition des spécialisations), soit par création d'une délégation pour la région parisienne (pas encore de délégation régionale).

8/ Un centre commercial et un centre de recherche spécialisé dans les accessoires pour activités équestres de loisir.

Il n'existe pas actuellement de salon permanent d'exposition et de vente des accessoires et matériels de monte, garde, transport et soins du cheval. Seuls les grands salons ou les grandes manifestations offrent de telles possibilités sur de très courtes périodes (moins de dix jours en général). Une telle offre en région parisienne garantirait une visibilité et une fréquentation minimale au pôle de compétitivité et permettrait de rassembler en un lieu unique l'ensemble des innovations commercialisées, tout en facilitant les contacts et les synergies en matière de recherche. La présence d'une écurie modèle permettrait en outre de faciliter l'expérimentation, l'exposition et la mise en œuvre des produits en conditions réelles.

9/ Un pôle logistique et services assurant la mise à disposition et la gestion des installations nécessaires aux pôles opérationnels.

Inclusion d'une hôtellerie destinée à l'ensemble des activités du pôle de compétitivité : club, formations, tourisme etc.

EFFETS ATTENDUS:

- Chiffre d'affaires global de 5 à 20 millions d'euros selon configuration;
- De 50 à 300 emplois directs selon configuration;
- Effet d'image sur la région, ainsi qu'aux niveaux national et international;
- Attractivité du territoire et de la filière équine;
- Protection et conservation du territoire.

PREREQUIS PHYSIQUES:

- Un espace dédié de plusieurs hectares (de l'ordre de 30) susceptible d'accueillir les activités initiales et leur développements potentiels, à proximité d'une zone de chalandise et de centres de compétence existants (exemple : Chantilly, Fontainebleau, …), facile d'accès (proximité aéroports – autoroutes – trains à GV et desserte locale).
- Libre de droits ou appartenant à un partenaire.

ETAPES DU DEVELOPPEMENT DU PROJET :

Mise en place sur environ 5 à 7 ans selon budgets disponibles, partenariats et situation de départ.

Etape 1: mise en place des structures juridiques, sélection des partenaires et établissement des conventions de partenariat (de l'ordre de un an. échéance 2015).
Etape 2: lancement du pôle 1 si reprise activité et structure existante ; lancement parallèle des opérations de conception et de construction du pôle 1 (2015- 2016).
Etape 3: en parallèle avec 2, établissement des schémas de cohérence de l'ensemble des pôles et conception des structures des 6 autres pôles (2015).
Etape 4: lancement des opérations de construction des 6 autres pôles selon sélection des partenaires et obtention des financements (2016 – 2020).

BUDGET - FINANCEMENT:

- Partenariat public – privé selon montage juridique et financier et droits préexistants sur terrains et droits commerciaux ou intellectuels.
- Budget prévisionnel 50 millions en investissement dont 5 à 10 pour l'écurie durable. Eventuellement divisible en deux ou même quatre phases de financement et de développement selon partenariats initiaux.
- Budget de fonctionnement/ business plan à établir par pôle et globalement.
- Input privé et/ou organismes publics ou associatifs partenaires: 25 à 50%.
- Subventions ou investissements nationaux 25 à 50% (inclus soutien aux constructions durables, recherche, dépenses fiscales etc.).
- Europe 25 à 50% (programmes de soutien à la recherche FP 7, FEDER, FEOGA, FSE).

TROISIEME PARTIE: ANALYSES DETAILLEES

I/ Environnement – marché – pré-localisation - impact
II/ partenariats à développer/ structures juridiques
III/ Eléments techniques

I/ Environnement – marché – pré-localisation – impact

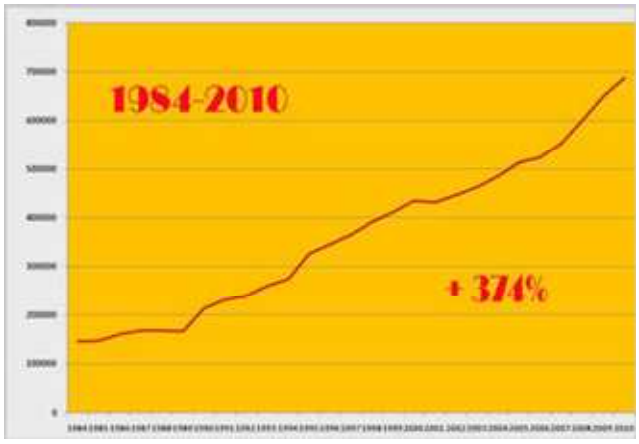
La pratique équestre de loisirs est en pleine croissance en France depuis plus de 30 ans, faisant de la France l'un des leaders mondiaux de ce sport de loisir: 30 000 pratiquants après la seconde guerre mondiale, 620 000 en 2001, dont 432 500 licenciés de la fédération française d'équitation – FFE - **2,3 millions de pratiquants aujourd'hui [3], dont 700 000 licenciés auprès de la FFE**, faisant ainsi de cette **fédération la troisième en France** derrière le football et le tennis, et de l'**équitation le premier sport féminin**. 14 millions de français (presque un quart de la population) se disent prêts à monter «si l'occasion se présente»[1].

Tableau 1

Évolution des licences équestres en France Chiffres FFE

1985	1990	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
147 108	214 007	325 670	434 980	513 615	523 696	553 560	600 805	650 437	687 334	705 783	706 449	694 480	666746

Source: Fédération Française d'Equitation



1984	*1985*	*1986*	*1987*	*1988*
145	**147**	**160**	**166**	**166**
071	**108**	**235**	**915**	**952**
1991	*1992*	*1993*	*1994*	*1995*
230	**239**	**258**	**274**	**325**
575	**282**	**808**	**873**	**670**
1998	*1999*	*2000*	*2001*	*2002*
391	**411**	**434**	**432**	**447**
624	**657**	**980**	**498**	**139**
2005	*2006*	*2007*	*2008*	*2009*
513	**523**	**553**	**600**	**650**
615	**696**	**560**	**805**	**437**

Figure 1. Le principal indicateur de l'évolution de l'activité équestre est le nombre de cavaliers li Licences 1984-2010 La progression depuis 1984 est de + 476%.

NB: Avant 2001, le même cavalier pouvait avoir plusieurs licences.
Source: FFE.

[1] Sondage SOFRES de 2011 commandé par la FFE.

Les données disponibles ne montrent **pas de réelle remise en cause de cette tendance malgré le choc économique de 2008** et la persistance de chiffres médiocres pour l'emploi et la croissance des industries du loisir sur la période récente[1]. On recense plus d'**un million de chevaux en France en 2014**, et cette population s'accroit régulièrement de 25 000 têtes par an.

Le **chiffre d'affaires global** de la filière équestre est estimé à **1,4 Milliards d'euros** pour **près de 200 000 emplois** dont 60 000 directs (premier employeur sportif privé en France). Le chiffre d'affaires de **la filière équestre de loisir y représente environ 750 millions d'euros** contre environ 40 pour les courses[2]. **Une famille française sur trois comporte au moins un pratiquant équestre**, **plus d'une famille sur deux comporte ou a comporté un pratiquant équestre**[3].

Malgré ces chiffres et ce niveau de développement, il n'existe **pas encore de pôle de compétitivité équestre dévolu à la pratique de loisir**, et **les rares centres dédiés** à la recherche, à la formation ou à la compétition des non-professionnels **sont** relativement **éloignés des principaux foyers de consommation**: Hippolia, unique pôle de compétitivité équestre déclaré comme tel, est surtout un réseau de professionnels de haut niveau plus qu'un pôle de concentration géographique, et son cœur de réseau se situe en Normandie; les hauts-lieux de la pratique équestre sont soit éloignés de Paris (pour le haut niveau Saumur à trois heures, pour le sport de loisir deux heures pour le Parc équestre fédéral de Lamotte-Beuvron en Sologne ou quatre heures pour l'équivallée de Cluny en Bourgogne), et les principaux centres de concentration et d'excellence proches de Paris sont consacrés aux courses ou au sport de haut-niveau (Chantilly pour les Courses, Fontainebleau pour les autres compétitions). **Alors que l'Ile-de-France est la première fédération régionale équestre et regroupe 15% des licenciés de France, nulle zone de concentration et d'excellence de l'équitation de loisirs ne se démarque dans cette zone**. On demeure frappé par ailleurs, que **plusieurs métiers liés à l'équitation et en fort développement** – par exemple la dentisterie ou l'ostéopathie pour les soins, ou la bourrellerie - **ne bénéficient pas encore de formation reconnue ou de diplôme en France ou de formation à proximité de Paris**. Et malgré l'importance du **marché de l'accessoire**, de l'équipement du cavalier à celles des écuries en passant par celui des montures ou de leur transport, **nulle zone de concentration où le cavalier habituel ou occasionnel puisse en un lieu parcourir une gamme étendue de l'offre disponible**. On trouve d'immenses zones commerciales spécialisées dans le bricolage, dans le sport ou l'habillement, mais pour trouver un large choix d'articles équestres, il faut attendre les salons ou les grandes compétitions (salon du cheval en décembre, open de France en juillet). **L'équitation de loisirs souffre d'un paradoxe : ses clients sont largement urbains, et surtout en Ile-de-France, mais ses zones de développement et de concentration sont encore essentiellement rurales** lorsqu'elles existent.

Uthippia se fixe pour objectif de remédier à ce paradoxe en créant **une zone d'excellence, d'innovation et de fixation au coeur de la principale zone de consommation actuelle**. Compte-tenu des exigences spatiales et physiques déterminées (zone de 30 ha disponible et proximité d'itinéraires de randonnée), **la localisation idéale se situe aux environs de Paris. La Seine-et-Marne représente un excellent compromis** pour localiser ce projet: nature et espace encore disponibles, proximité des grands centres de consommation et de loisirs (Paris et son agglomération, Marne-la-Vallée et Disneyland), desserte locale, nationale et internationale (autoroute A4, TGV de Marne-la-Vallée, deuxième aéroport international en Europe à Roissy-en-France). L'Ile-de-France est la première fédération régionale française avec près de 100 000 licenciés, **la Seine-et-Marne est le troisième département de France par le nombre de licenciés** (plus de 20 000, juste derrière les Yvelines). **Une région artificielle constituée de la Seine-et-Marne et des départements limitrophes, comporterait** presque 100 000 licenciés – l'équivalent de l'Ile-de-France – soit **15% des licenciés français et près de 20% du pouvoir[4] d'achat français dans ce secteur**.

Impact

Plusieurs catégories d'impact sont attendues d'Uthippia: revitalisation de zone et attractivité régionale, protection de la nature, urbanisme, emploi, innovation.

Revitalisation de zone, attractivité régionale

Cette forme d'impact dépend de la localisation exacte du projet et notamment des caractéristiques de la zone retenue. *En zone urbaine/péri-urbaine* (exemple: zone naturelle du Pâtis à Meaux), on peut attendre une revitalisation d'une zone d'activités et de services proche des principales zones de chalandise et de services

[1] Une baisse est toutefois recensée pour la première fois en 2013 et 2014 (cf tableau supra). On pourrait la rapprocher, à titre d'explication, de la baisse du pouvoir d'achat arbitrable des ménages en 2012 (2,2%, l'une des trois seules baisses, et la plus forte, depuis 1984 [moins 2,4 cette année-là], les deux autres étant 2008 – moins 0,2 – et 1996 – moins 0,7), ainsi que de la hausse du taux de chômage (passé de 9,2 en 2011 à 9,8 % en 2012 alors qu'il n'était que de 7,4% en 2008). La deuxième fédération sportive de France, la FFT(tennis), perd également 1,63% de licences en 2013.

[2] Source : FFE, ICPE, France-Galop et Hippolia 2012.

[3] Sondage BVA réalisé en 2011 pour la FFE.

[4] Selon étude marketing **Ideactif - Février 2008 :** Le revenu médian province des pratiquants est de 23 000 euros et celui de la région parisienne de 26 500 euros. Les pratiquants appartiennent à des foyers CSP++ et sont concentrés dans des zones périurbaines aisées.

existantes (comblement d'une «dent creuse» dans l'urbanisme de la ville tout en préservant et valorisant l'environnement naturel d'une zone non urbanisée). Une partie de l'attractivité commerciale et industrielle de l'axe D603 profite à Uthippia, qui elle-même renforce et soutient l'attractivité et la fréquentation des zones commerciales et industrielles attenantes. Les synergies sont possibles et facilitées avec les activités implantées à proximité : zones artisanales et industrielles, centres commerciaux, écoles, collèges et lycées, foyers spécialisés, parc naturel du Pâtis. La construction d'une passerelle cavalière/piétonne sur la Marne, donnant accès à l'espace naturel sensible de Bois-le-comte à l'ouest de Fublaines, permettrait de valoriser cette zone située au sud de la Marne et d'intégrer plus aisément Uthippia au réseau futur des équiroutes européennes. *En zone rurale ou semi-rurale* (exemple: Bouleurs proximité sortie 16 A4, Quincy-Voisins proximité sortie A140, Montceaux-lès-Meaux proximité forêt domaniale) : l'activité est créée ex-nihilo et constitue en elle-même un pôle d'attraction et de préservation ou d'amélioration des zones naturelles environnantes (selon situation juridique et naturelle, zone natura 2000, parc naturel régional, ZNIEFF[5], espace naturel sensible).

Protection de la nature, urbanisme

Par nature, la pratique équestre s'intègre intimement à son environnement naturel car elle a besoin d'espace : espace d'hébergement et de soins aux chevaux (boxes, ateliers, stockage), espaces de travail (manèges, carrières, parcours de cross ou de Trek), espaces de détente, de nourriture et de mouvement (paddocks, prés et champs en herbe), espaces de promenade et de randonnée. L'installation d'un pôle équestre dans une zone donnée doit avoir pour conséquence et corollaire, au minimum, de geler ou ralentir l'urbanisation, de maintenir des espaces naturels indispensables, d'établir et d'entretenir des chemins cavaliers ouverts au piétons ou cyclotouristes mais de préférence fermés aux véhicules à moteur. Cette utilisation de l'espace est compatible avec les réglementations applicables aux zones naturelles protégées tout en suscitant et en facilitant l'échange entre le public et l'espace naturel rural ou périurbain. Elle ouvre la voie, en zone urbaine ou périurbaine, à une évolution vers une urbanisation future qui mêle plus intimement les fonctionnalités urbaines majeures et le maintien d'un contact biologiquement indispensable avec des espaces naturels ouverts et sauvegardés.

Emploi

Le décompte exact des emplois potentiellement induits par Uthippia dépend de nombreuses données à préciser : volume et espaces d'activité, situation, nombre et qualité des pôles effectivement mis en place. On peut toutefois tenter de donner une fourchette estimative: de 100 à 150 ETP (équivalent temps plein) en rythme de croisière, plus une cinquantaine d'intervenants extérieurs occasionnels ou permanents.

Tableau 2

Evaluation des emplois directs potentiels d'Uthippia

	Administration, support, gestion, communication	Opérationnels à temps plein	Intervenants et vacataires
Ecurie	5[6]	5[7]	10[8]
Centre éducatif	2	2	10
Centre de recherche et de formation aux soins	2	8[9]	10
Centre de formation à la gestion	2	2	10
Pôle de recherche et de conseil juridique	2	1	10
Poste de loisirs	2	1	
Agence d'emploi spécialisée	1	1	2
Centre commercial de recherche	10	50	
Logistique et services communs	10[10]	10[11]	
Total	30 à 40	70 à 100	Environ 50

Source: création originale

Innovation et recherche

Elle est au cœur d'Uthippia et de la notion même de pôle de compétitivité. Plusieurs catégories et formes d'innovation doivent se conjuguer ici. Une innovation organisationnelle, une innovation matérielle, une innovation par la recherche appliquée.

Le principe organisationnel même d'Uthippia se veut novateur : en regroupant sur un seul site activités sportives et de loisir, de formation, de recherche, et en appuyant la recherche appliquée aux accessoires sur la création d'un centre commercial, le projet se démarque de toutes les entités existantes par la variété, la complémentarité et la concentration des activités. L'innovation organisationnelle sera sensible également dans la conception du site, qui

[5] Zone naturelle d'intérêt écologique, faunistique et floristique

[6] Tâches de direction, facturation, communication, entretien des espaces et soins aux chevaux

[7] Moniteurs et instructeurs permanents

[8] Intervenants extérieurs occasionnels pour stages, concours ou manifestations diverses

[9] Deux intervenants permanents au moins par catégorie d'activité : ostéopathie, soins du pied, dentisterie etc.

[10] Administration, comptabilité, communication, publicité et commercialisation, organisation des manifestations et animations communes, gestion des ressources humaines de l'ensemble du site etc.

[11] Gardiennage et sécurité, entretien des espaces et des bâtiments, transports, etc.

devra conjuguer l'efficacité, la performance de l'ensemble des activités prévues, avec le bien-être du cheval, du cavalier, des auditeurs et stagiaires, et du visiteur.
L'innovation matérielle sera perceptible dans l'emploi des matériaux, la rationalisation absolue des espaces et de l'entretien, le recyclage des eaux de pluie, des déchets animaux, l'économie et la production d'énergie.
La recherche s'appuiera sur et soutiendra les activités de formation, mais mettra également à profit la présence permanente de constructeurs ou fabricants d'accessoires pour accélérer la conception et la diffusion des innovations en ces domaines.
L'innovation et sa diffusion se nourriront également des connexions internationales que le site initiera ou suscitera, à travers les intervenants ou stagiaires étrangers, l'organisation de stages mixtes équitation/linguistique, l'attraction de touristes étrangers à travers les équiroutes européennes, et bien sur par contacts électroniques immatériels.

II/ partenariats à développer/ structures juridiques

Si l'association Interregionovations a vocation à porter le lancement du projet (études initiales, recherche et contacts partenaires, constitution des premières structures juridiques et des équipes), il conviendra de définir et créer assez vite la structure juridique globale support du pôle de compétitivité. Celle-ci pourrait prendre, en première analyse, la forme d'une association (« Uthippia ») – ou d'un groupement d'intérêt public – regroupant dans des proportions et selon des clés à déterminer les entités constitutives du pôle de compétitivité et les partenaires. Cette association aura notamment pour rôle de fixer le cahier des charges techniques de chacun des pôles de compétence. Chacun des pôles de compétence aurait quant à lui vocation à constituer une structure juridique autonome, relevant d'une logique juridique propre en termes de réglementation et de mode de financement (ex: EARL pour l'écurie, relevant des financements FEOGA/FEADER; entreprise d'insertion ou établissement social pour la formation des publics en difficulté, relevant plutôt du FSE ; association, SEM ou syndicat mixte pour le pôle logistique s'il est le propriétaire et le constructeur des bâtiments et installations, susceptible d'appeler le FEDER au tour de table etc.).
Les partenaires à mobiliser doivent être attraits parmi les spécialistes et les leaders naturels nationaux ou étrangers pour chaque spécialité : écoles belges et britanniques de formation de dentistes ou d'ostéopathes, écoles vétérinaires; FFE (fédération française d'équitation), GHN, IFCE du côté institutionnel; universités et avocats spécialisés pour les formations; fabricants et distributeurs généralistes ou spécialisés d'articles et accessoires d'équitation (pour les généralistes, il conviendrait d'intéresser a minima l'une des trois chaines de commercialisation d'articles de sport en France, Décathlon, Go Sport ou Intersport, et/ou une chaine spécialisée généraliste telle que PADD, afin de constituer un point d'attraction central comme dans les centres commerciaux classiques. Cette hypothèse suppose cependant qu'au moins l'une de ces chaines de sport généralistes envisage pour l'occasion de changer sa stratégie de marque en créant un magasin de 3000 à 6000 m2 spécialisé sur une seule catégorie de sport).

III/ Eléments techniques

Les éléments techniques relatifs à chaque pôle de compétence auront vocation à être traités et définis précisément au sein de l'association ou du GIP Uthippia lors de la rédaction des cahiers de clauses techniques, mais devront respecter les principes clés évoqués in limine (innovation, internationalisme, synergies internes, synergies externes, espaces physiques adaptés, sublimation de l'espace en flux électroniques). Ils devront impérativement intégrer le dernier état de l'art connu dans chaque domaine spécialisé (par exemple, recours aux puces de télésurveillance des paramètres biologiques des équidés en cours de développement par la société Biopic).
Sur le plan géographique et physique, le projet pourra utilement se rapprocher du modèle proposé (voir croquis détaillés par ailleurs), comportant quatre quartiers de bâtiments sur trois niveaux. Au rez-de-chaussée (niveau 0), deux à quatre (selon phasage) quartiers de 50 boxes chacun, répartis sur un cercle d'environ 400 mètres de rayon (800 mètres de diamètre) et donnant en intérieur sur un nombre équivalent de manèges couverts et visibles également du niveau et en extérieur sur autant de paddocks individuels que de boxes. Au premier étage (niveau 1), une surface commerciale et de recherche appliquée de 6000 à 12 000 m2, comprenant une surface principale de 3000 à 6000 m2 ; une surface d'activité de 3000 à 6000 m2 (bureaux, salles de cours, etc…) ; une surface hébergement de 3000 à 6000 m2 également. Au niveau 2 (deuxième étage), un restaurant panoramique de 600 m2.

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MARKET ORIENTATION OF UKRAINIAN NON-PROFIT HEALTH CARE ORGANIZATIONS

Abstract

The article identifies the peculiarities of market orientation of Ukrainian non-profit health care organizations. The special role of non-profit entities in the healthcare sector, peculiarities of theirs market environment, problems of market orientation of NPOs' of healthcare in Ukraine are presented in the article. On the basis of results of research and conclusions some recommendations are offered in the article.

Key words: *non-profit marketing, non-profit organization, health care, market orientation.*

The initiatives of international organizations, governments and community experts confirm the relevance of investment into human resources, especially in health care and education sector and into the labour market. The monitoring of the level of health care is carried out by numerous international organizations and affects the measurement of human development. Thus, when it comes to Ukraine «Human Development Report 2013» shows the following situation: according to the level of care Ukraine falls into the group of countries with a high level of development, being 78th out of 186 countries. Nevertheless, the level of quality of health services is the lowest among the countries with a high index of human development: only 23% of respondents are satisfied with the quality of health services in Ukraine (REPORT, 2013). This situation indicates that there are serious problems in health care sector in our country.

One of the major concerns is the fact that there is an extremely low dynamics of Human Development Index in Ukraine. The life expectancy among Ukrainians pushed back, thus, in 2013 this figure was lower than the average across the globe. Medical and demographic situation in Ukraine indicates poor health. This is reflected in the low birth rate, high death rates, especially among men of working age, high prevalence of chronic non-communicable diseases.

In recent years, the sphere of healthcare in Ukraine is going through many transformations. Among the problems of a modern system of Health of Ukraine are the following: ineffective and inefficient use of budgetary resources, the poor quality of medical care and its standardization, lack of motivation mechanisms to provide effective and quality health care, lack of proper orientation the needs of the patient, the systematic injustice.

The influence of non-profit entities in the healthcare sector is growing. The experience of developed markets shows that subjects of non-profit health care sector can equally compete with commercial enterprises, with approximately the same efficiency (SCHLOMACH B., 2010). The search for ways of alternative not paternalistic types of non-profit subjects in the health care sector is a key issue that needs careful study in Ukraine. Among the reasons for the intensification of non-profit subjects in the sphere of healthcare in a post-industrial economy the following aspects can be singled out: the mitigation of disadvantages of non-profit market, enhancing the benefits and reduction of the imperfections of the state, civil society, the pressure of the steady increase in average spending on health care, decentralization (КАМІНСЬКА Т., 2012). These issues are aimed at transforming action, structure and philosophy of non-profit health care organizations into more market-like for reaching their goals.

The analysis of scientific research has revealed that in terms of discussing the phenomenon of non-profit

marketing certain approaches have been outlined. These approaches are integrated in the system of academic knowledge. Studying the theoretical prerequisites of non-profit marketing the following ideas are worth mentioning**:**

– The ideas of inter-sector exchange of marketing knowledge which have been suggested and developed in the articles of P. Kotler, S. Levy, G. Zaltman and others;

– The theoretical and methodological aspects of pro-marketing orientation of non-profit subjects which have been substantiated by A. R. Andreasen, P. Kotler, S. Andrieiev, L. Melnichenko and others;

– Another point of view has been shared by the researchers S. Dolnicar, K. Lazarevski. Their main idea is that the mission of NPO and non-profit product were formed far beforehand, thus they cannot be changed in accordance with the market demands. That is why NPO should not be purely oriented at marketing. However, some scholars admit the usage of certain strategies and marketing tools for non-commercial activities for achieving non-profit purposes. Such an approach is justified in terms of the concept of bounded rationality which has been initiated by H. Simon. This concept centered the questions of ethic violations of the principle of consumer sovereignty in the use of «bad goods», the issue of identification of goods and services as «bad goods», the regulation of production and consumption of «bad goods». These ideas, concepts and theories established the ideological foundation of the concept of non-profit marketing.

The end of the XX and beginning of the XXI century witnessed increasing interest in non-profit marketing. What actually determines the process of marketization of Ukrainian non-profit sector is increasing the number of non-profit subjects; the increase of most non-profit organizations that resulted in the need to manage multiple functional areas, geographic locations and social groups, etc; the necessity for updating marketing potential usage as additional tools of involved funds; strengthening inter-sector and intra-industry competition; shift of responsibility from state authorities towards the sphere of non-profit entities; poor quality of non-profit goods; reduced funding from the government, business and international organizations; reduction of human resources; fundamental changes in the staff of customers serviced by non-profit organizations.

In spite of variety of approaches to treating the notion of non-profit marketing there can be identified some important market peculiarities of non-profit marketing:

1. Marketing tools, strategies and technologies that are used in commercial business cannot be directly transferred into the sphere of non-profit sector without any adaptations due to a number of specific things common for non-commercial market (КОТЛЕР Ф., АНДРЕАСЕН А., 2007; АНДРЕЕВ С., МЕЛЬНИЧЕНКО Л., 2000);

– limited amount of secondary information in marketing sphere as to non-profit clients and their needs, which is compounded by the complexity to obtain reliable information from the clients themselves;

– gap of information among the customers of non-profit product (information asymmetry). Thus, before affecting the behavioral patterns of the clients, they must be informed about an existing problem and non-commercial product, and only after that it is allowed to use the rest of the marketing tools;

– the need to influence the behavior of the client in order to change it radically, even if customers dislike new changes, but they are intended for their benefit, the benefit of other social groups or society as a whole. This topical issue presupposes high moral and ethical standards in the implementation of marketing activities;

– benefit gained by a client as a result of non-profit exchange is not always evident;

– the presence of more complex behavioral patterns and attitudes than in the commercial sphere;

– the complexity of measurement and display through mass media of social and psychological benefits from the use of non-profit product;

2. Non-profit marketing covers a wide range of fields of human activities, much more than the production and promotion of goods and services;

3. Non-profit marketing leads to a wider and more effective validation of a number of other important needs of the people in community (for instance, need for realization of civil rights and the need for social and cultural values, etc.);

4. Non-profit marketing helps resolve problems connected with establishing mutual links between the three groups of non-profit entities: government, non-governmental entities and individuals engaged in non-commercial activities.

5. Non-profit marketing should be based on the principles of classical marketing concepts (КОТЛЕР Ф., АНДРЕАСЕН А., 2007) which include the prevailing role of the exchange, willingness to change the proposal,

focusing on coordinated programs, the crucial role of marketing research, a tendency to segmentation, planning and assessing the risks, targeting at the outcome. Thus, the non-profit marketing business can be defined as a set of subsystems that are bound with associations and the sole purpose. It functions with respect of fundamental principles of classical marketing, however, limited in accordance with the principle of the priority of the consumer.

The **purpose** of the article is to identify the features of market orientation of the subjects of non-profit healthcare sector through the dimensions and in the context of Ukrainian realities and the realities of developed markets.

The Special Role of Non-Profit Entities in the Healthcare Sector

The appearance and behaviour of non-profit entities in the healthcare sector are explained within the points of view of the various theories by different scientists. These theories emphasize either a special role of the non-profit entities as alternative to the state producers of public goods both associate the existence and activities of non-profit entities with information asymmetry. Those who support the public good theory, or the concept of market failure/government failure theory, believe that non-profit entities work in the spheres where the state is unable or inept and private sector is not interested to work, thereby correcting market failures. Taking into considering the problems of non-profit marketing in the light of developing effective mechanisms of interaction between public, private and "third" sectors should be made a special remark as to the role of non-profit entities in the healthcare sector. First, through information and educational activities these institutions reduce double information asymmetry that is much more peculiar for the healthcare sector than any other social services market. Such dual information asymmetry includes information asymmetry between providers and consumers of health services on the quality of those services and information asymmetry between the government and service providers about the actual output of public goods by non-profit entities.

Secondly, NPOs healthcare in developed countries themselves provide certain types of care, creating an opportunity to receive medical services free of charge to those groups of people who, because of financial insecurity cannot get it, mitigating, by doing this, drawbacks of non-governmental medical services market. Third, NPOs control the transparency of procedures for budget allocation to the needs of healthcare facilities, initiating monitoring and carrying out public representation of citizens, representing and defending their interests. Fourth, NPOs advocate distributing public resources: financial, material, labour, attracting and directing volunteers, donors, funds, financial assistance to those needs that for the reasons for lack of interest or lack of commercial funding do not meet commercial or public health agencies. Fifth, NPOs act as a link between government, the private sector and the public, creating and maintaining a humanistic direction of permanent improvement of public health.

Non-profit Organization of Healthcare Sector in Ukraine

The activity and business of non-profit healthcare entities is focused on the following objectives: providing medical aid; prevention and rehabilitation; educational services; implementation of management activities; protection of the rights of the medical process; other activities the purpose of which is not making a profit. In Ukraine, the following non-profit organizations of healthcare sector exist:

1) public non-profit entities (municipal non-profit enterprise: hospitals, pharmacies, spa facilities, etc.)
2) budget organization (established by local authorities whose activities are wholly or partially funded by the state or local budgets);
3) non-profit entities:
- Non-profit entities that provide health care (hospitals and other medical institutions);
- Non-profit institutions that are not directly involved in the provision of health services, but affect it (consumer associations (on advocacy, research, monitoring the implementation of targeted programs of health, consumer representation in public councils in government agencies), associations of physicians (medical staff);
4) individuals engaged in non-commercial activities in the healthcare sector.

Unfortunately, current methodology of state statistical observations in Ukraine does not provide specific accounts for non-profit organizations of healthcare sector. For example, the Public Council under the Ministry of Health of Ukraine delegated representatives from 133 institutions of civil society who represent active non-profit organizations, including patient organizations, professional medical associations, charities and other organizations that deal with health, representatives of the media. For comparison, the non-profit sector is represented by 44128 the U.S. NPOs, who make up only 12% of all charities, but for about 60% of the income of all charities (BLACKWOOD A., ROEGER K., PETTIJOHN S., 2012). For 100 thousand U.S. residents there are about 14 NPOs health care, which is three times higher than in Ukraine. This is specifically important to notice that the model of financing of U.S. health care is private and it does not provide active support for the non-

profit sector. Thus, it is apparent that the level of non-profit healthcare sector is underdeveloped. Among the reasons explaining the situation like this should be indicated insufficient financial support from the state, lack of development of civil society, the prevalence of the shadow economy in medicine (КАМІНСЬКА Т., 2012).

The Peculiarities of Market Environment of Non-Profit Organizations in the Sphere of Healthcare

The analysis of theoretical and empirical sources has led to identify the basic features of the goods and services in health care:

- Market is characterized by significant level of information asymmetry. Commercial market entities are not interested in improving the quality of products (goods or services). The target group (consumers or buyers) are ignorant in this sphere, and health care providers behave as sales agents. Under these conditions, non-profit entities act as a counterweight;

- The peculiar feature of this environment is its adjustability. Only professionals can provide most services, which means limiting the scope of the activities of NPOs, which may have a limited range of services. Under regulation there also belong communication activities, government regulation of advertising of medicines, medical supplies and medical services in Ukraine. All this is carried out by the Law of Ukraine "On Advertising" and other normative acts regulating relations in the field of advertising;

- The market of medical products and services is a market of imperfect competition. However, the empirical studies indicate the existence of competition between the same entities of non-commercial sphere in the developed countries, the intensity of which is higher compared to the competition between sectors (between non-profit and commercial entities) (EID J., 2006), which confirms the need for using the adapted marketing approach in the non-profit sector;

- The consumers' decisions regarding health products are affected by several factors, including: patient mindset (motivators, triggers, and barriers), media channels (print, in-office, pharmacy retail, out-door, broadcast, digital, and DM/EM), key influencers (caregiver, HCP, managed care, pharmacist, and community (HAIMOWITS I., 2011).

The Peculiarities of Market Orientation of NPOs healthcare sphere in Ukraine

At the threshold of the XXI-st century a non-profit health sector of Ukraine faced a number of challenges, including demographic and socio-cultural changes, technological changes and changes in health care policy. One of the most influential changes deals with the notion of aging population in Ukraine, poor health services, the development of medical technologies. These challenges and permanent shifting of responsibility from government agencies to the private non-profit sector makes the last seek and implement innovative methods of organizational development. Marketing is considered to be one of the most important. The idea of non-commercial marketing is an indirect influence on the distribution of public resources in order to improve public healthcare sector and facilitate access to those in need, providing a dual effect on the population. The impact is on both potential consumers of healthy lifestyles and taxpayers for their support of legislative process in the medical field.

International experience shows that NPOs healthcare acquired a number of preferences under the circumstances of marketing orientation:
- Strengthening the competitive position of the NPOs on the non-profit market;
- Strengthening the financial capacity of the NPOs (attracting donors);
- Capacity building of NPOs (involving volunteers, increased focus on the needs of target customers, and establishing long-term relationships with stakeholders.

While monitoring the websites of domestic and foreign healthcare NPOs it has been found that they often engage social marketing to influence change in behavioural patterns of social groups towards increasing consumption of fruit and vegetables, encouraging physical activity, blood pressure control, reducing obesity and so on. To the field of social marketing of NPO healthcare services the following aspects cane be referred: healthy lifestyle, preventing and reducing the incidence of infectious diseases, the involvement of charitable aid, family planning and attention to the sick and the elderly, reducing various addictions and treatment and preventative measures.

The actions of other market entities affect the market orientation of NPOs. As in other countries, Ukraine marketing of commercial and non-profit entities generates conflict intake because commercial marketing promotes excessive demand, often irrational (alcohol, smoking, high calorie food, uncontrolled drug intake). The objective of NPOs is a direct or indirect combating irrational demand by means of marketing communication. As dominant in modern Ukrainian social advertising there can be identified the subject of AIDS, drug abuse and prevention, as well as advertising against smoking and alcohol consumption.

In addition, the marketing of commercial business of health often leads to unrealistic expectations among the

consumers while consuming healthcare products (marketing of "a magic pill"). Often the commercial advertising is transformed into the unfair signs. For example, in Ukraine in 2013, the number of violations of the law on protection of economic competition in the healthcare market totalled 6.63% of all violations, taking third place in the number of violations in the category of "unfair competition" among all markets (3BIT, 2014). This causes the need for revitalization of civil society towards monitoring advertising of health services and products and advocating the rights of patients for reliable information, spreading information about medicines' cheaper substitutes, spreading information about the products and activities of NPOs and others.

However, the marketing communication activities of commercial enterprises in developed countries are focused, their selection is based on previous studies; that is why they are effective. Therefore, we believe that the structure of the marketing efforts of NPOs healthcare in Ukraine should correlate with the structure of marketing efforts of commercial entities. For this purpose, the structure of the communication mix should give the priority to promotion channels such as websites and social media, digital media, public relations, conducting and spreading research and analysis, advocacy marketing, print advertising. Multi-communicational solutions of NPOs should be based on preliminary market research and combine personal and non personal communication (websites, email, mobile devices, etc.).

The current trend of highly developed countries i.e. the change of priority of personal communication with sales representatives in favour of the Internet is also a characteristic feature for the Ukrainian society. In Ukraine, 46% of adults use the Internet regularly, about a quarter of Ukrainian use social networks, 10% of the population (over 16 years) use the mobile Internet (ВЫШЛИНСКИЙ Г., 2013). Thus, the Ukrainian population is also open to communication with the NPOs via the Internet. The abundant usage of the Internet among the target groups allows NPOs to actively use this cheap source of communication in order to keep them informed.

The Problems of Market Orientation of NPOs' Sphere of Healthcare in Ukraine

In order to get adequate and effective market orientation of NPOs it is important to consider national priorities in healthcare system. For now particularly sensitive issue in the health sector of Ukraine is the low quality of health services, as it has been noted by international observers. However, in our country the number of medical errors does not affect the number of lawsuits. In Ukraine there are no official statistics on damage to patients by doctors. Ukrainians rarely go to court in order to obtain compensation for medical injury (WWW.RIGHTS.UNIAN.UA). In Ukraine there is no juridical definition of "medical service", "medical error", "doctor's error", which complicates the procedure for the investigation of insurance claims, and does not contribute to solving the problems of poor service. These legal deficiencies do not contribute to improving quality of care.

A significant problem is the paternalistic expectations of Ukrainians. Unfortunately, in the public consciousness only social responsibility of the state now is entrenched, but because of financial difficulties it is not always adequately realized. Ukrainian people associate health with the provision of health services, rather than with their own way of life. The paradox is that the dominant position on the scale of values that Ukrainian citizens allocating health unnatural manner combined with a significant prevalence of risk factors and susceptibility to unhealthy lifestyles. For example, despite the relatively high level of dissatisfaction with their health, on the one hand, and the recognition of the risk of smoking to health on the other hand, almost a quarter of the population aged older than 12 years has the habit of smoking (ЛІБАНОВА Е., МАКАРОВА О., КУРИЛО І., 2012).

These differences in the intentions and actions of the Ukrainians are confirmed by official statistics. According to the State Statistics Service of Ukraine, Ukraine's share of household spending on health care and on harmful products (alcohol and tobacco) in 2012 were approximately equal (3.5% and 3.8% of total household expenditures, respectively) (ОСИПОВА І., 2013). Due to this a number of positive changes in the behaviour of target audiences is hampered in practice.

So the priority tasks of Ukrainian NPOs are public education, changing behaviour and advocacy. The experience of developed countries shows that improving public health can be achieved only if the simultaneous activity of the government and society as motivated by social change and counter-change individual behaviour of citizens. One of the expected results is to form people responsible attitude to their health.

The Conclusions and Prospects

An old paternalistic model which implies the dominance of the doctor in taking decisions degraded because of the fact that these days' patients have become more informed. Social and economic relations in the market for a non-profit health care are particularly important in a relationship of economic non-profit entities, and the level of marketing is becoming a major factor in the organizational and financial capacity of NPOs. However,

the problem of lacking the financial capability and NPOs studied area remains to be relevant.

For non-profit healthcare in Ukraine it is recommended:

- Marketing activities aimed at consumers are to be built on previous studies, taking into account the peculiarities of perception, motivation, barriers. All these factors should be taken into consideration when forming the marketing mix;

- Marketing activities aimed at consumers and professionals should be differentiated in terms of promotion and marketing channels, in launching non-commercial product;

- Marketing activities should have thorough information provision at the local and regional levels. Therefore it is necessary to strengthen the information component of marketing activities vertically, creating an effective marketing information system that would embrace the level of NPOs, regional and national levels. These changes would increase the financial sustainability of non-profit entities in healthcare system and strengthen their competitiveness on the market;

- It is worth continuing to solve the problem of priority of national healthcare: ensuring quality of services, preventive work in the fight against AIDS, drug abuse, smoking and alcohol addiction; knowledge mobilization to reduce information asymmetry; advocacy of patients' rights;

- To intensify cooperation of NPOs and the government in carrying out preventive measures to eliminate the negative impact of social determinants of health to create conditions for the preservation and strengthening of public health at the state and private-public partnerships, forming a responsible attitude of every person to a personal health and the system of public health;

- Enhance cross-sector interaction between different sectors of the economy (education, health, environment and industry), cultivating and mobilizing their contribution towards the formation of stable value preferences and behaviour of Ukrainians towards their healthy lifestyle.

Thus, the problem of activation of marketing activities of NPOs is a complex problem and the solution depends on the creation of suitable conditions for the development of innovative healthcare, public-private-public partnership and counter-changing individual behaviour of citizens. This is expected in the future all these will be translated into strategy and policy of advocacy, a number of stable social beliefs and attitudes.

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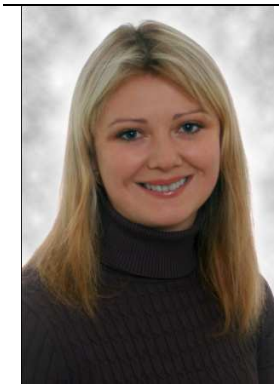

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протидія торгівлі людьми

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- For all articles non-discriminatory language is mandatory.
- Tables should be prepared on separate sheets; they should not be embedded within the text. Each table should have an appropriate caption.
- All photographs, maps, charts and diagrams should be referred to as "Figures", and should be numbered consecutively in the order in which they are referred to in the text.
- Endnotes should be marked clearly in the text at a point of punctuation, and listed consecutively at the end of the paper. They should not be listed at the bottom of each relevant page.
- The full references should be listed at the end of the paper. They must include the names and initials of all the authors, the year of publication in parentheses, the full title of the article (or book), the full name of the journal, the volume number and pages and, for books, the publisher's name and city of publication.

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