



Representative Model of Economic Development for an Agricultural Enterprise in the Context of Socioeconomic Rural Space Formation

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ARTICLE INFO

Received May 12, 2017
Revised from June 10, 2017
Accepted August, 21 2017
Available online September 15, 2017

JEL classification:

H79; O13; Q13.

DOI: 10.14254/1800-5845/2017.13-3.5

Keywords:

agricultural business,
territorial community,
algorithm,
development model,
socioeconomic space,
political and economic decentralization.

ABSTRACT

The article systematized the most widely spread models of agricultural enterprises' functioning and presents the authors' algorithm how to stimulate further development of socioeconomic rural territories in Ukraine under the conditions of the ongoing political and economic decentralization. Attention is also focused on similar experience and development trends in Poland, since borrowing this experience might be helpful for Ukraine while taking into account socio-economic, ethnical cultural and climatic features of agricultural enterprises' functioning along with the most pressing needs of their local communities. The authors present here their own step-by-step approach to designing the model of agricultural business development in the context of harmonizing the interests of farmers on one side and united territorial communities on the other.

INTRODUCTION

There is a large variety of studies concerning the possible models of the agrarian sector functioning in the post-Soviet countries, however, vast majority of them are purely theoretical ones, thus contributing only to ever-increasing gap between theory and real practice. And large-scale liquidation of collective farms (kolkhozs) and other forms of state property in rural territories has

only worsened the overall situation in the sector, since many connections with the sectoral research centers have been lost.

Since the general approaches to public management in national agriculture have been changed rather quickly, the so-called “collective model” of agricultural production development has been also quickly abandoned. Nearly simultaneous liquidation of 9 thousands of kolkhozs in fact meant that nearly 31 mln ha of agricultural lands suddenly became “free”. At the same time, rural population in Ukraine, on the one hand, got its extra resource – as property and land shares, but on the other hand, this population also faced the total lack of practical mechanisms how to implement and use this newly obtained economic potential. Thus, today a larger share of the most high-quality agricultural lands is under long-term rent of agricultural holdings or other large farming enterprises, while the initial owners of these land shares get the lowest interest rate from this rent (the lowest in the world, as some researchers state). Consequently, this renting out has really minor (or none at all) contribution to the welfare of rural population, the owners of these land shares.

1. LITERATURE REVIEW AND PROBLEM STATEMENT

Among the wide variety of studies suggesting and grounding various models of economic development for agricultural enterprises specifically and rural territories overall we would like to mention first of all the research contribution and achievements of the following authors: I. Hodge and P. Midmore (2008); M. Adamowicz and A. Smarzewska (2009); Ya. Gadzalo and V. Zhuk (2015); L. Apostel (1960); A. Popova and M. Kanavstev (2015).

However, we need to underline here that, despite their obvious scientific contribution and research value, none of the mentioned studies offered any practical mechanisms how to actually implement the suggested model. Therefore, none of them were used in real practice of enterprises. Moreover, due to the time-of-publication factor, none of them has taken into account the most recent changes in Ukraine related to the processes of political and economic decentralization.

The key research aim here is formation and presentation of an algorithm for model construction to be further used in economic development of agricultural enterprises functioning within representative socioeconomic space. Actual implementation of such a model would not only improve significantly financial performance of these enterprises but would also boost the development of the related social and environmental infrastructure.

According to the aim posed above we have also formulated the following *research tasks*:

- To analyze the most convincing examples from the international experience in the field of agrarian economic development in the context of increasing social and environmental responsibility of agrarian producers to their local communities;
- To offer an algorithm applicable to a representative rural community concerning their agricultural enterprises performance taking into account the today’s opportunities of decentralization, both political and economic one.

Materials and methods. Methodology of our research rests on the use of special economic & mathematical methods and on the general research principles of scientificity, systematicity, continuity and consistency.

2. RESEARCH RESULTS

Decentralization processes in Ukraine started back in 2015, however, neither national research circles, nor government and/or local authorities were really ready and prepared for the start of such a truly vital reform. At that point there were no transparent, readymade model or algo-

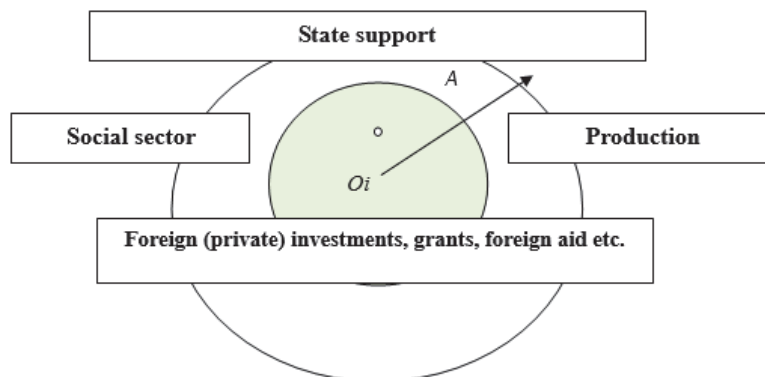
ritms for this reform implementation or for further functioning of united territorial communities. Moreover, there was an obvious legal and financial vacuum in this regard. Under such conditions, the reform overall became possible only thanks to enormous efforts of a few activists who took up the idea with great enthusiasm.

Theoretical grounds for this reform and for further functioning of the new model of rural life in Ukraine have been provided in the following studies: Ya. Gadzalo and V. Zhuk (2015); V. Alekseev (no date); V.V Boiko (2014); Ya. F. Zhovnrchik (2005); I.G. Kostyrko (2013); L.V. Lysenko (2010); V.D. Zalizko and V.I. Martynenko (2016). In particular, in our previous study we have already outlined the methodology for classification of rural communities and offered its practical example on the data from Malyn district of Zhytomyr oblast. In this previous study of ours we have classified rural communities by the level of their economic security using 60 indicators which covered social, environmental, demographic and economic vectors in these communities' development.

Summarizing the key ideas from (Zalizko, Martynenko, 2016; Burja et al., 2008; Thöle A. J., 2013), we would like to confirm the practical relevance of the general urban-concentric model (see Figure 1) of the economic development of agricultural enterprises and rural territories overall.

Legend to Figure 1: O_1 – metropolitan cities (with more than 1 mln population); O_2 – large cities of regional importance; O_3 – towns which are centers of districts ($i = 1, 2, 3$).

Figure 1. Urban-concentric model of rural territories' development



Source: designed by the authors

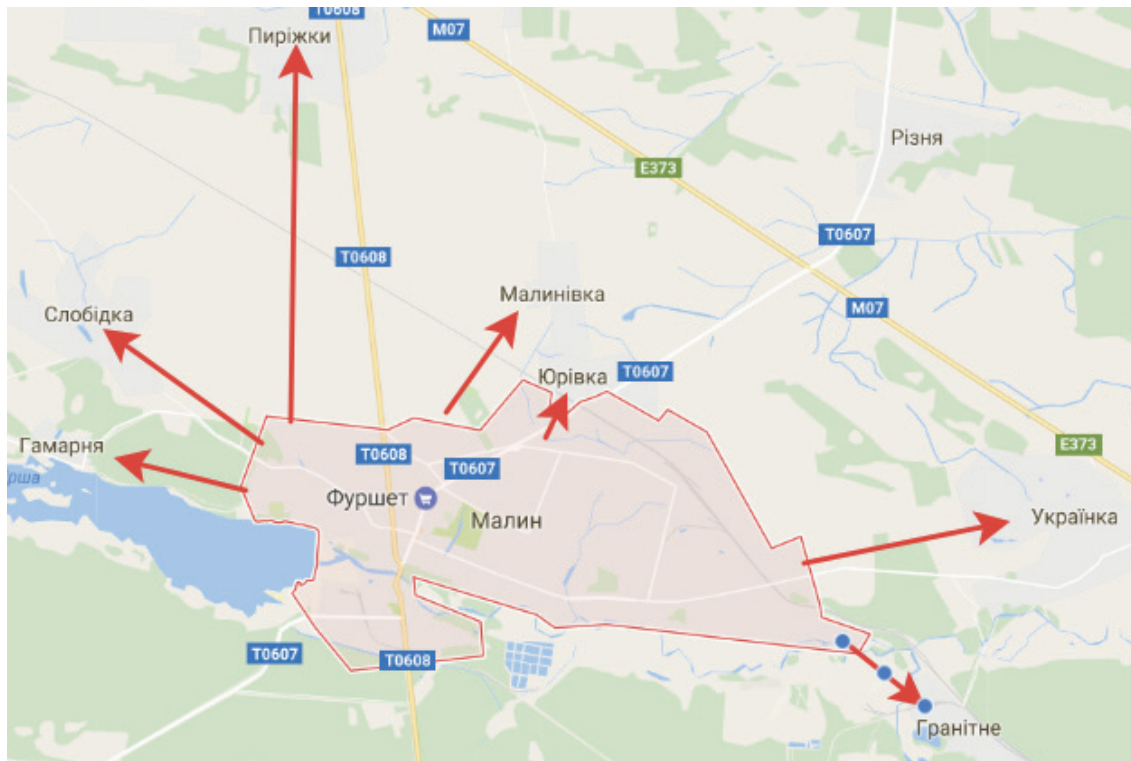
Previously proved empirically relation

$$\left\{ \begin{array}{l} O_3A = \frac{1}{2}O_2A = \frac{1}{4}O_1A = 30km \\ O_3B = \frac{1}{2}O_2B = \frac{1}{4}O_1B = 50 km \end{array} \right\} \quad (1)$$

clearly shows that such calculation are fair in relation to radius-vector $O_3A = r_3 = 7,5$ km, to the neighborhood of which belong the following villages and towns: Malynivka, Yurivka, Granitne, Hamarnya, Slobidka and Pyrizhky. These territorial units together form the so-called "territory of

welfare” (see Figure 1), since here the majority of population is employed and using the social infrastructure of the district center (which means relatively good transport connection, healthcare etc.).

Figure 2. Rural territorial units within the so-called zone of welfare



Source: authors' presentation

Thus, in the process of modelling the economic development of agricultural enterprises within this zone of welfare, the issues of social space (which includes education, medical, cultural infrastructure, utilities etc.) are actually of secondary importance, at least in comparison with other territorial units within the same Malyn district. This also indirectly proves that it would be impossible to come up with one common/universal model of rural life which, in theory, is supposed to take into account all necessary indicators, influencing the development of rural communities. For this reason specifically, our article is dedicated to the formation of two separate algorithms in designing the representative model of economic development for agricultural enterprises:

- the 1st algorithm is designed specifically for the zone of welfare and its units; and
- the 2nd algorithm would be more feasible for depressed territories.

On a more general level of our research we need to mention also that it would be quite useful to take into account the positive experience of Polish villages' development and in particular the creation of a special fund (back in 1990) which was one of the results of signing an agreement between the government of Poland and the European Economic Community. As of today, this is one of the most successful model of agribusiness development in Europe. The top priority in this programme was boosting the economic capacities of Polish farms, with special attention being paid to medium-sized ones (up to 50 ha), small ones (up to 10 ha) and microfarms (max. 1 ha).

Support to all three groups guaranteed, first of all, better access to high-tech agricultural equipment and development of cooperation and networking. Expediency of using such a positive Polish experience is obvious not only to researchers but also on the ministry level: the Minister for agrarian policy and food of Ukraine, in particular, noted once that “we are striving to make farming high-tech and attractive for our today’s youth. Polish experience in this field is extremely important” (www.minagro.gov.ua). Ukrainian farmers have already taken certain steps in the direction of borrowing Polish experience, inter alia, during the International agroindustrial exhibition “AGRO-2017” there will be a presentation of the brand new online service “Agrokraina” (in Ukrainian – “Agro-country”). This high-tech service is supposed to unite the owners of various agricultural equipment so that small farms could exchange those, or rent the equipment out to each other etc., thus increasing the efficiency of both agricultural field performance and agricultural planning.

Therefore, taking into account the already mentioned Polish experience (described, for example, in (Adamowicz, Smarzewska, 2009; Thöle, 2013) and also using the data on the mentioned above rural territorial units which together form the zone of welfare, we would like to classify those units by their representative production features (Table 1).

Table 1. Classification of the most representative models of economic development of agricultural enterprises operating on local territories

<i>Rural territorial unit</i>	<i>Model</i>	<i>Key features</i>
Granitne, Lyubovychi, Hamarnya, Ukrainka	Cross-sectoral	Agricultural works, mining (sand, break stone, granite etc.) and logging
Slobidka, Yurivka		Agricultural works; production of semi-finished food products (kotlets, varenykys, various meat products etc.) and also green tourism
Pyrizhky	Sectoral	Agricultural production (crop farming)
Malynivka	Cluster	There exists an agrarian cluster producing meat

Source: authors’ data

All of the above allows us formulating the algorithms for economic development models’ construction for the local agricultural enterprises. These algorithms are supposed to match the criteria of optimal socioeconomic space, taking into account financial, economic and sociocultural norms as established.

First, let us consider the examples of the villages Granitne and Pyrizhky, both are, to some extent, representative rural communities, thus, for them we can formulate the algorithm of all further economic activities of agricultural enterprises taking into account new opportunities due to decentralization.

The first step in this algorithm is the inventory valuation of all available assets and resources of the local community (see Table 2 below). Analysis of the experience of 300 UTC (united territorial communities) allows us state that as of today nobody attempts to evaluate objectively their united economic potential, moreover, there is an obvious legal vacuum in relation to land shares’ ownership (mostly because these shares are physically on the territory of the united community but legally they belong to the State Land Cadastre).

Table 2. Socioeconomic potential of rural settlements Pyrizhky and Granitne

<i>Component of the socioeconomic potential</i>	<i>Pyrizhky</i>	<i>Granitne</i>
Total area occupied, ha	377	865,6
Gross area of land, ha	4203	14427
Gross area of agricultural land, ha	2680	7214
Gross area of agricultural lands under crop farming, ha	2605	7012
Including: arable lands	1661	6507
Fallow lands	5,21	14,02
Perennial plantations	5,21	14,02
Hay meadows	11,38	8,41
Grazing pastures	65,99	384,2
Forests and brushlands	1642	-
Lands under gardens	-	-
Reserve lands	1160	-
Lands of the reserve fund	172,7	-
Leasehold lands	829,0	-
Average size of the land share	2,66	3,30
Availability of quarries (granite, sand, clay etc.)	-	+
Number of households	278	660
Permanent-residence population number	846	1587
The share of households with centralized gas supply, water pipeline, heating system and drainage, in %	-	+
Number of dump wells	474	6
Depopulation index	1,38	1,73
The share of population employed in the agricultural sector, %	81	40
Number of preschool institutions	-	-
Number of schools	1	1
Number of outpatient care units	1	1
Number of libraries	1	1
Number of universal shops	2	2
Number of economically active farms	7	10
Number of collection stations for agricultural product	-	-
Number of welfare enterprises	-	-
Processing stations for agricultural product	-	-
Rural cooperatives	-	-
Availability of technical areas and buildings which can be further used in agricultural works	+	+

Source: compiled by the authors on the basis of own survey of the village heads and also using the data of village passportization carried out by the Institute of Agrarian Economy

Thus, Table 2 present 32 factors influencing the economic potential formation in local communities, however, this list of factors is not inclusive since nowadays the State Statistical Service of Ukraine is not doing anymore the official survey in villages. Still, the presented data, even partial one, enables us make some conclusions concerning the economic potential of the communities in question. And thus, we are also able to develop some recommendations concerning potential stimulation of further development for the local agricultural enterprises.

Our comparative analysis of these two rural settlements clearly shows that Granitne has several significant qualitative advantages, and their presence can be explained by the following factors:

- There is a granite quarry on the territory of this settlement;
- There is an actively operating system for processing and further sale of products made of stone, sand and clay;
- Population overall is mostly economically active;
- The settlement has its own social infrastructure.

However, despite some achievement in terms of inflows to the local budget, we also need to mention that most of the local citizens are too dependent on the core enterprise of the community. This core enterprise is LLC “Unigran”: the company is providing services of drilling and demolition works, operating mostly on quarries (due to regional specificity). “Unigran” is also producing paving slabs and some other products made of broken stone, sand and similar materials. Despite the fact that this company has several business directions in its portfolio, speaking hypothetically, it can still go bankrupt – and this automatically means mass and sudden unemployment of local population, and also emptying budget for this settlement and several nearby smaller villages as well.

The second step in the algorithm of economic activities’ development for agricultural enterprises taking into account opportunities and needs of the local territorial community covers the individual setting of top priorities for further development.

Taking into account that the larger share of rural population is traditionally rather passive, selection of strategically important directions in entrepreneurship development must be initiated at the level of local self-governing authorities. A good example in this regard is the activity of one of the local village heads – from the village Fursy. The budget of this village used to be strongly dependent on several large enterprises operating relatively nearby, namely: the plant “Termo-PACK”, Bilotserkivske forestry, a state enterprise and an experimental base “Oleksandriya”, the Institute of Crop Protection (affiliated to the National Academy of Sciences of Ukraine), LLC “BilotserkivMAZ”, one large fuel-filling station and finally a local station of “Kyivstar” (one of the three leading national mobile providers). Despite these significant factors of influence upon the local budget, the village head still managed to motivate the fellow villagers to be more active in the development of small and medium businesses, thus increasing the overall quantity of businesses in the area to the level of 400.

Such active business diversification, in turn, has promoted further development of local social infrastructure. For example, now the local area has its own servicing cooperative “Dobrobut-Agro” (the name can be translated into English as “Agrowelfare”). This cooperative is responsible today for timely garbage disposal and it is also providing such services as plowing of backyard gardens and other lands, transportation of agricultural products and construction materials etc. (more details can be obtained from the promo materials on the village Fursy from the Internet platform arci.org.ua).

Turning back to the already analyzed two villages from Malyn district, Zhytomyr oblast (Table 2), we need to emphasize that both settlements have large unused resources, namely, in such agriculturally promising sectors and areas as gardening, horticulture, husbandry, green tourism and also in the sector of public utilities and communal services.

Following quite positive example of the mentioned above Fursy village and taking into account the population numbers in Granitne and in Pyrizhky, in our view and according to our calculations, it would be expedient to introduce additionally 40 and 80 (respectively) new units of family farms. This would boost employment in the area and at the same time guarantee additional inflows to local budgets. For this matter, the following steps would be necessary:

- To carry out a range of practical trainings so that to present in detail the key aims of agricultural family business, its functioning principles, major advantages and potential threats and risks etc. During such trainings, special attention should be dedicated to analyzing the best practices from both national experience and foreign one;
- To form a workgroup which later would become the central link in the future network of family farmers, while the network itself is supposed to function as an agricultural cooperative;
- To offer the options of convenience access to financial resources;
- To guarantee there is sufficient legal, financial and economic support for the whole duration of the related business projects' implementation;
- Media coverage of the performance of the network and of the enterprises included into it.

Taking into account quite impressive agrarian potential (Table 2) of both settlements, we would like to present an example of a representative business project targeting specifically microbusiness.

During the first two steps the involvement of agrarian universities and research centers and laboratories affiliated to the National Academy of Sciences and National Academy of Agrarian Sciences would be necessary. Also helpful maybe attracting external consulting from other organizations and institutions specializing in boosting agricultural development, these organizations may assist with legal support, for example, or with specific business plans' development.

Most of failures in this process usually happen at the third step, actually, and the largest share of these failures happen simply because rural families seldom have enough working capital to start own business (or add one more direction in it). Several ways to solve this problem are suggested. First of all, applying for contests and/or grants can be helpful, and such applications must be sent to 10-20 contests/grants at the same time. Since rural population usually has very limited access to such sort of information, it would be extremely useful to create an additional specialized public-private fund/platform/center (or other form of organization) so that to consolidate this sort of information in one place. Special attention should be paid to grant and other opportunities provided by the following international organizations (see Table 3 for authors' systemization).

Table 3. Systematization of grants and contests by foreign and international donor organizations aimed specifically at boosting the development of rural territories

UNDP in Ukraine	Resource Center "Hurt"
COSME	Horizon 2020
Western NIS Enterprise Fund (WNISEF)	SES – Senior Experten Service
SSC Association	Center for International Private Enterprise (CIPE – UNIDO)
Global Innovation Found	UNICEF Innovation Fund
The Embassy of Sweden in Ukraine	Programs and Grants of the US Embassy in Ukraine
Finnish Fund for Local Cooperation	Monsanto Fund
Danish Refugee Council	Creative Europe / European Commission
European Commission in Ukraine	USAID
European Endowment for Democracy (EED)	GIZ – German Association for International Cooperation
Small Grants System/ Polish Aid	Swiss Agency for Development and Cooperation (SDC – EBRD)
MatraKap – Small Embassy Projects Programme/ Royal Netherlands Embassy in Kiev	Grants of Germany Embassy in Ukraine

Platform for civil society development	Grants of the Ministry of Foreign Affairs of Estonia
Embassy of Canada in Ukraine	Transborder cooperation programs of the European Union

Source: compiled by the authors

Additionally we need to note here that similar projects have been already initiated, for example, by the Club of Sustainable Business (for more details – visit their site: sbiz.club). This platform is already collecting information from a range of NGOs providing expert support in the fields of consultancy, fundraising, data mining etc. However, this initiative has one weak spot: it does not involve state research institutions, affiliated to the National Agrarian Academy, for example, or other public institutions which have significant research and organizational potentials.

Secondly, financial and tangible resources of local communities must be attracted to business and public projects on the conditions of transparent tenders. This would promote fair competition inside the local business community.

Thirdly, there is an obvious need for a national programme for rural business support, since only statewide, national-level support is capable to join the efforts of various ministries and other influential institutions.

The final stage in the suggested here algorithm includes setting the indicators for results' evaluation and at the same time taking into account the experience of national and foreign enterprises in the field of agroenvironmental and agrotourism clusters' formation. This final stage also needs to take into account the newest trends in rural settlements' networking and other agricultural innovations, mostly those related to minimization of human capital use.

Conclusions and recommendations. Comprehensive implementation of all the steps mentioned above would, first of all, boost agricultural microentrepreneurship. And this newly emerged agrarian microenterprises could have not only traditional farming functions but also more innovative ones, including green tourism, for example. The latter would mostly target urban dwellers, actually, since for them green tourism and studying national traditions overall have become a fashionable trend these days. At the same time, local self-governments are supposed to set the most comfortable conditions for green tourism development, including advertisement of the local tourism sites and attractions, and not only in the largest cities of our country, but also in smaller cities and event towns of regional importance.

The suggested here algorithm of the agrarian economic development is rather relative and conditions, of course. In real life it is rather hard to find such representative settlements which would fulfill all preconditions described here. However, our logic of thinking and the propositions put forward here still enable finding certain "points of growth" which are supposed to boost further economic development of agrarian enterprises, especially in the context of social responsibility of farmers to local communities under the ongoing decentralization trends.

Overall, the research presented here proves there are indeed real prospects for the formation and further popularization of the representative models of rural territories' development in Ukraine. From this research as well as from any analysis of the current agrarian practices it would be quite clear that Ukrainian rural life demands urgent institutional changes, especially in such sensitive field of state support for agrarian development. And this support, in the future, must cover not only traditional farming but also other, non-farming but still rural businesses. The latter are also functioning full-scale on rural territories. This means they are also contributing to rural employment and overall to the development of rural socioeconomic space.

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