

## CLUSTER APPROACH IN ADMINISTRATION OF RURAL AREAS

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Formation of new administrative-territorial entities defines a need to innovative approach to managing. Is it possible to facilitate development processes with the means of the local community? Objective: to substantiate the expediency of using the cluster approach in the administration and possibility of its practical implementation in smart-community. We make a sociological survey of 800 rural residents in 6 regions of Ukraine. Study period 2013–2017. The outcome of the study is an integrated cluster-creative approach through the practice of patina management and inclusive development. Most fully he found his manifestation in the conditions of tribal estates and tribal settlements.

*Keywords: administration; cluster approach; management, smart-community, united territorial communities.*

*JEL Codes: D83, O10, R28, Q01, Q18.*

### 1. Introduction

Administrative activity at all levels is aimed at ensuring the effective development of certain objects (enterprises, territories, districts, regions, states). For example, Common Agricultural Policy of the EU defines the priority of sustainable development and the common position of European countries regarding foreign economic activity (Europe, 2018; Popova, 2013). The number of adherents of socio-economic and environmental approaches in the management of local development is growing dynamically (Mykhailova, 2016; Pavlov, 2009). The emphasis of the authors is on the processes of activating the production activity in cooperation with the state authorities and providing the objects of infrastructure, clustering of the economy (Sabluk, 2010).

The priority of socio-ecological orientation, biomimicry and the nature appropriate methods in management is the basis of sustainable development, whose representatives are on all continents (Christian, 200; Gilman, 2013; Meulen, 2013; Vidickiene, 2013).

Sometimes the analysis of recent researches and publications allows to record the lack of a clear algorithm for the application of a cluster approach in the administration of individual territorial communities, along with traditional and project. Is it possible to facilitate development processes with the means of the local community?

Objective: to substantiate the expediency of using the cluster approach in the administration and possibility of its practical implementation in smart-community. Tasks of the study were: 1) to identify problems of administration of rural areas; 2) to substantiate the perspectives of mechanisms of management of development of rural territories, using the cluster approach. The study includes analyzing of traditional approaches in administration in order to assess the progress of the rural development and changes in the quality of population life. The methodological basis of the study is a systematic approach to the study of socio-economic phenomena in rural areas under the influence of macroeconomic factors and local initiatives in order to increase their socio-ecological and economic potential. The abstract-logical method of research allowed, through theoretical generalizations, to determine the research problems, to formulate the working hypothesis and conclusions. We make a sociological survey of 800 rural residents aged 18–72 years was conducted, of which 56% were women and 44% were men in 6 regions of Ukraine, among which 20% were inhabitants of ecological and tribal settlements. The survey participants were persons up to 35 years. They were 26%. Participants from 35 to 55 years old accounted for 47%, 55 years and older – 27%. Respondents with higher education accounted for 28%, incomplete higher – 6%, secondary – 30%, middle – 33%, other – 3%. Respondents engaged in social sector amount to 30%, agriculture – 26%, seniors – 23%, forestry 3%, the unemployed – 18%. This ensures the representativeness of the sample. Study period 2013–2017.

Promoting the achievement of the effects of administrative action is possible due to the harmonization of interests of economic entities in various sectors and the gradual implementation of planned tasks through the implementation of complementary and mutually supportive projects. The results of the research are used in the educational process of the Zhytomyr National Agroecological University and in the practice of management of territorial communities.

## **2. The current state of rural areas development**

Administrative activity – defined by the law or the Constitution of the country regulatory activity of public authorities, executive authorities, governing bodies of enterprises, enterprises (Contemporary, 2018). Such activities at all levels should focus on achieving the effects of management objects (economic, environmental, social, etc.). Administration understands is the management style, which focuses on the procedures and control of the proper execution of orders (Surmin, 2010). The basic problems of modern management are the oversaturation of data with the lack of necessary information, increasing the responsibilities of specialists in the process of preparing management decisions and reducing the time for their adoption (Duliba, 2017; Svyharev 2010; Tikhomirov, 2017). The above-mentioned problems have become par-

ticularly acute due to the processes of decentralization. In order to prioritize the activities of specialists in the management of newly formed communities, indicators of their development are organized systematically, which are grouped according to the target orientation of their activity (Table 1).

Table 1. Indicators of rural development

Sector	Positive perspective dynamics	Negative perspective dynamics
Social	<ul style="list-style-type: none"> <li>- number of births per 1000 women of childbearing age;</li> <li>- how much you can buy different categories of goods, such as food, such as bread, sugar, etc., pensioners ("consumer scissors");</li> <li>- birth rate;</li> <li>- population's standard of living and quality of life;</li> <li>- level of provision of population needs, including water, food, housing, infrastructure, including roads;</li> <li>- the ratio of able-bodied population to 1000 people, which is on the maintenance of society;</li> <li>- the ratio of able-bodied population per 1000 population of the country;</li> <li>- the number of self-sufficient people</li> <li>- amount of the aggregate, including monetary, income of the family</li> </ul>	<ul style="list-style-type: none"> <li>- number of divorces per 1000 of adult population;</li> <li>- mortality rate, including the number of deaths per 1000 people of the adult population of childbearing age;</li> <li>- the number of retired per 1000 people;</li> <li>- the number of migrants per 1000 people of the country's population</li> </ul>
Ecological	<ul style="list-style-type: none"> <li>- soil fertility level;</li> <li>- the level of woodiness;</li> <li>- the level of diversity of species of flora and fauna per 1 hectare of area;</li> <li>- number of settlements practicing separate garbage collection;</li> <li>- share of business entities producing organic products up to their total quantity;</li> <li>- capitalization of territories;</li> <li>- use of energy, water, land resources per GDP;</li> <li>- indicators of the development of the environment and their compliance with the standards of sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>- extent of pollution of land, water, air;</li> <li>- the number of landfills, including unauthorized ones</li> </ul>
Economical	<ul style="list-style-type: none"> <li>- the number of workable, the level of employment, including self-employment;</li> <li>- extent of human resources availability</li> <li>- production of gross production per 1 able-bodied, one inhabitant, 100 hectares of agricultural land;</li> <li>- extent of alternative employment development;</li> <li>- average wage level;</li> <li>- volume of investments in terms of GDP;</li> <li>- fraction of "green economy" in the public sector</li> <li>- the level of territory's energy independence;</li> <li>- the share of energy received from renewable sources to the total amount of energy consumed;</li> <li>- diversification of activities of entities</li> </ul>	<ul style="list-style-type: none"> <li>- unemployment rate;</li> <li>- level of production, use, and consumption of objects of "artificial origin" such as genetically modified organisms, chemical compounds, etc.</li> </ul>

The analysis of community activity has shown the highest degree of their interest in the development of small and medium-sized businesses, solving social problems of development and ensuring their sustainable character in the long run due to interaction with the environment and identification of priority areas. The following trends have emerged in the development of Ukrainian territorial communities: the traditional (adaptive to the changing environment conservative approach, which was one of the reasons for the youth migration from the settlements) and the project approach (involves positioning the interests of project initiators, defining the goals and means of achieving them, which does not fully meet the moral and ethical standards and needs of the community). The peculiarities of their management are the lack of concerted activity and lobbying of their own interests at all levels of government, as well as the lack of system support from the side of public administration and local government.

As a consequence of the traditional approach, there is a tendency to reduce the number of inhabitants and rural settlements (Fig. 1 – formed according to the data of the State Statistics Committee – Database, 2018). The number of rural settlements remains unchanged, then as of January 1, 2020, their number will be 28.3 thousand units, and 2030 – 28.1 thousand units, that is, the rate of reduction of number rural settlements from the beginning of Ukraine's independence will make 20 units annually. The contraction rates were uneven, so most of them were taken off the map of Ukraine in 2001 – 88 number of rural settlements.

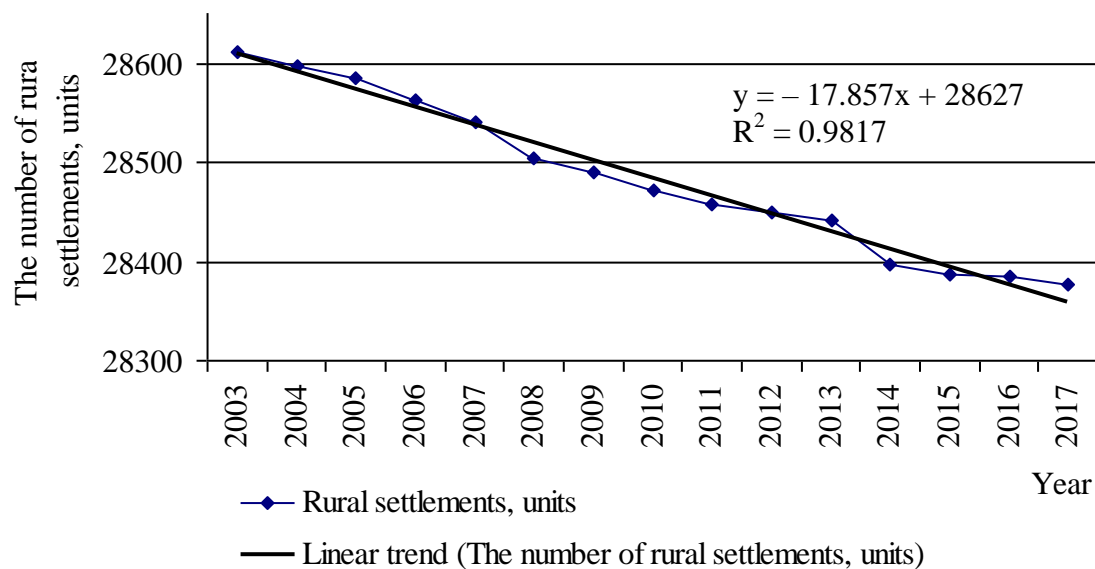


Fig. 1. The number of rural settlements as of January 1 of the corresponding year  
Source: formed according to the data of the State Statistics Committee (Database, 2018).

The vegetables, potatoes, horticulture, berry and viticulture, cows, sheep breeding and beekeeping portions are traditionally higher than 70% of the production produced in the country, resonates with world practice, in particular the experience of the USA and the EU, where the development of small forms of livelihoods and management is stimulated by the state (table 2) (State, 2018; Vishnevskaya, 2017).

Table 2. Dynamics of the share of households in the production of basic agricultural products in Ukraine, %

Indexes	Year						2016 to 2011 (+,-)
	2011	2012	2013	2014	2015	2016	
Share of households in the production of agricultural products, %	48.2	49.3	46.0	44.7	44.9	43.0	-5.2
The share of households in the production of crops, %	43.3	45.0	41.4	40.6	40.9	38.7	-4.6
incl.: potatoes	96.9	96.7	97.0	96.8	97.8	97.8	+0.9
vegetable crops	84.3	85.7	88.3	86.1	86.1	85.9	+1.6
fruit crops and berries	84.2	81.6	80.7	83.4	80.9	81.6	-2.6
Grape	35.4	35.8	33.2	44.7	46.6	41.5	+6.1
The share of households in the production of livestock products, %	59.4	58.2	56.5	54.5	54.4	54.3	-5.1
incl. milk	79.7	77.7	77.5	76.2	74.9	73.9	-5.8
Eggs	37.2	37.3	37.6	36.0	41.8	46.6	+9.4
Wool	83.3	85.1	86.6	85.4	86.2	87.2	+3.9

The increase in the share of livestock products produced by agricultural enterprises is associated with an increase in demand for organic products on the world market, which determines the current trend. The production of private peasant farms is characterized by higher quality indicators and a wider assortment in terms of meeting consumer needs compared to agricultural enterprises. Despite the fact that households remain the main producers of many types of agricultural products, according to statistical data, the share of population with per capita equivalent cash income per month, lower than the statutory subsistence minimum for 9 months of 2016, amounted to – rural population – 16.5%, while urban – 9.6%. The share of the population with per capita equivalent cash income per month, lower than the actual living wage for the 9 months of 2016, amounted to – the rural population – 74.1%, while the urban – 61.4% (State, 2018; Vishnevskaya, 2017). The survey found that there were problems of lack of external financing, additional incentives, including through regulatory support from the side of the authorities and local self-government. Traditionally, the above problems are overcome due to mechanisms of internal motivation in small forms of life and management, in particular households. On the basis of a selective sociological survey of inhabitants of rural areas, the presence of the following main problem aspects of the development of households: 1) the need to overcome the disparity of prices for products and the low level of profitability of rural residents; 2) low employment (the problem of hidden unemployment), and the spread of employment outside the place of residence; 3) ensuring the proper level of product quality; 4) informing public about the possibilities of effective sales of manufactured products on the basis of interaction; 5) the necessity of forming a mechanism for interaction and integration among households, including through the functioning of agricultural servicing cooperatives, etc.

It has been established that such a project approach has disadvantages, the main of which are: 1) the contradiction between the desire to attract additional resources and the loss of leadership reputation due to the imposition of their own interests as opposed to the values of the community as a whole; 2) the short-term effect of investment of additional financial resources and, consequently, motivating participants to change (lack of internal needs in the implementation of strategic objectives reduces the effectiveness of the implemented measures).

### **3. Promising mechanisms for activating social processes in rural areas**

Practical overcoming of the weaknesses of existing management mechanisms under the conditions of application of traditional and project approaches is the introduction of creative and clustered approaches, which allow to realize the process of decomposition of tasks of administrative management, accumulate resources and clearly and carefully design their use in time. Under the cluster approach to administration, we understand the integration, focused on the interaction of elements of the system "power – business – the population". The advantage of using this approach in the administrative activity of a separate territorial community is the receipt of archaeological results from the implementation of individual projects due to their interaction or providing optimal combination in time with other projects. Implementation of the creative-cluster approach in combination with other will strengthen the synergistic effect (ecological, economic, social) of the accepted management decisions in an indefinitely long term due to their flexibility and mobility, because of the high level of internal motivation of community inhabitants. An analog of its introduction in the administration of social development is the experience of formation of the smart-community in the United States. The result of their activities is a practical monopoly (over 80%) of small forms of production of the public sector and the reduction of asymmetries and regional development imbalances (Lukyn, 2006). As a system-forming cluster integrity, such a community is able to independently provide employment and profitability of its inhabitants, by strengthening its own stable of the social and economic system to external influences.

In the practice of smart-community we propose the introduction of the following algorithm of community governance (Fig. 2) as a mechanism for neutralizing the disadvantages of traditional and project approaches. Effective use of this algorithm is possible thanks to the catalyze of agents of change (the initiative inhabitants of rural areas are capable of being activators of development). The highest rates of development are represented by tribal settlements, the number of which grows annually.



Fig. 2. An algorithm for a cluster approach in administering a territorial community

Proposed cluster and creative approaches in administration will allow to take into account the socio-psychological and ecological-economic consequences of making managerial decisions as much as possible. Indicators of the effectiveness of this activities are availability of clean water and air in the long run, soil fertility and the health of the nation as a result of harmonization of human and natural relations, achievement of such economic results as raising the level of employment and welfare of the population (mainly due to self-employment), and as well as rising levels of food and economic security of families.

The need to harmonize the relations between the participants in the social processes of the national ecologico-economic system as a strategic one has been determined by a multifunctional management approach, which allows to optimize energy flows between economic, ecological, cultural, social, administrative, legal, technoproduction and other areas of population's life, which, through the prism of "nature and human-centeredness", forms the system of development interests, where the integrity of the individual and its spiritual and cultural growth are the main ones, which allows obtaining a positive synergistic effect at the national level. Dynamic changes in the social environment are determined by the directions of priority development vectors through the introduction of biomimetics (biomimicry) of technologies in life, management of the population and social institutions. Existing systemic-synergetic connections revealed in the structure and nature of the interactions between the material and spiritual values of the communities illustrate the informant model of their development in the conditions of globalization and decentralization of state governance both in Ukraine and in the world. Therefore, the determination of the magnitude of the synergistic effect from the implementation of the multifunctional approach is proposed to be evaluated depending on the rate of change and effects:

$$\frac{\partial K(t)}{\partial t} = [K_{\max} \mp K(t)][s_i(t) + b_i(t) + p_i(t)]$$

$s_i(t)$ – the magnitude of the social effect (level of employment and social security) at the time  $t$ ;  $b_i(t)$ – the magnitude of the environmental effect (level of environmental safety) at the time  $t$ ;  $p_i(t)$ – the magnitude of the economic effect (level of profitability) at the time  $t$ ;  $k_{\max}$  – maximum capacity of the environment;  $k_i(t)$  – the degree of influence on the size of the potential of the medium (has a negative value in case of decrease, positive – in case of increase).

Harmonization of relations in the system "Man-Nature" provides an increase in the internal capacity of the environment and increase the level of economic efficiency of its functioning. Implementation of system-synergistic approaches in rural development management involves identifying the strategic components of its formation and introducing them into the practice of public administration through the mechanisms of public-private partnership. An example of a large-scale approach to restoring natural resource potential is the experience of China in the restoration of forest plateau. The cost of restoration (flooding of territories) was \$100 per 2.5 million inhabitants of territories. Peasants with low-income levels were involved in the dismantling of forests in the erosion-hazardous zone of degenerated ecosystems in the upper and middle reaches of the Yellow River (the degradation occurred as a result of intensive agriculture and deforestation). As a result, the risk of flooding has decreased, the air-water balance of the soil has been restored, its fertility has increased and, as a result, employment in the region has increased by 87%, farm productivity has increased, and its activities have been diversified (the organization of terraces has helped to reduce the labor-intensive work and contribute to sustainable development of the region), production of grain increased from 365 kg to 591 kg per household income of \$200 per year per inhabitant (Restoring, 2018).

The mechanism for improving the strategic approach to management, based on a combination of cluster, creative and project approaches, is the implementation of the "Ancestral estate" idea that anticipates "to provide the legislative right to each citizen of Ukraine, if desired, to receive 1 hectare of land for the organization of the ancestral estate, free of charge, without the right to sell, with the right to transfer only by inheritance" (the draft law "On ancestral estates and tribal settlements"), (Christian, 200; Gilman, 2013; Meulen, 2013; Vidickiene, 2013). Conducting informational and explanatory work in the direction of forming the local community through the project of "Family Homestead" concept, supported at the Cabinet of Ministers of Ukraine (2009, 2014, 2017) level, the Ministry of Agrarian Policy and Food of Ukraine (2009–2017), Ministry of Education and Science of Ukraine (2013, 2016), Ministry of Justice of Ukraine (2017) and other ministries and departments, National Academy of Agrarian Sciences (represented by the National Research Center "Institute of Agrarian Economics"), Zhytomyr National Agroecological University, Sumy National Agricultural University, National University of Life and Environmental Sci-



ences that, to the extent of their authority, had analyzed and made their own proposals to the development of this approach as such that promotes the revival of rural areas mainly through the formation of union supporters. The result of this actions was the development of strategic management decisions at the level of territorial communities, programs for probation aimed at the re-socialization of sub criminals and crime prevention, the subjective-behavioral modeling of rural development through the analysis of productivity, labor efficiency and focusing attention on structural changes in administrative activities, including due to activation of non-agricultural types of productions and services. Formation of the food security principles through the provision of land use multifunctionality, modeling of socioeconomic processes, ensuring the activation of the population through the mechanism of public administration is happening through increasing the level of its cooperation with local authorities, allowed to initiate the development of a pilot community development project with the active participation of ZNAEU, NRC "Institute of Agrarian Economics", Association of Village and Settlement Councils and other civil institutes of advisory and coordination activities in rural areas. Approval of administrative decisions of the project approach by the students of the ZNAEU is a mechanism of formation of the initiation of rural residents in the direction of building their own settlement.

### **3. Conclusions**

1. The application of the traditional approach to communities administration has a number of ecological-economic and socio-psychological problems, the main of which is the low level of employment and profitability of rural residents, due to the lack of application of integration mechanisms and effective interaction between households.

2. Only the project approach in the administration of communities (without taking into account creative and cluster approaches) has shortcomings that are primarily due to the short-term effect of attracting financial resources and the impossibility of combining the interests of the community and its leadership, which generates a decline in the reputation of the latter. The application of the cluster approach along with the creative should take place in accordance with the presented algorithm, which will strengthen the synergistic effect of the management decisions taken and take into account their ecological, economic and socio-psychological consequences.

3. The grouping of indicators for the rural areas development by the hierarchy: social, environmental, economic, allows to achieve a synergistic effect in the management and administration system. Most fully he found his manifestation in the conditions of tribal estates and tribal settlements.

### **4. Suggestions and recommendations**

Prospects for further studies connected with the development of mechanisms for interaction between the investor and the object of innovation and investment at the level of local communities.

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## **KLASTERINIS POŽIŪRIS Į KAIMO VIETOVĖŲ ADMINISTRAVIMĄ**

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### **Santrauka**

Naujų administracinių-teritorinių vienetų formavimas kaimo vietovėse lemia naujoviškas požiūris į valdymą globalizacijos ir socialinės aplinkos transformacijos į kūrybinę ekonomiką kontekste. Ar vietos bendruomenė gali palengvinti šiuos vystymosi procesus? Darbo tikslas – pagrįsti klasterio metodo panaudojimo valdyme tikslingumą ir jo praktinio įgyvendinimo galimybę mažančioje ir kūrybingoje bendruomenėje. Atliktas sociologinis tyrimas, kuriame dalyvavo 800 kaimo gyventojų iš 6 Ukrainos regionų. Tyrimo laikotarpis – 2013–2017 metai. Pateiktas klasterinis-kūrybiškas požiūris, taikant seną, tradicinę valdymo ir inkliuzinio vystymosi praktiką, kuri labai aiškiai pasireiškia giminių sodybų veikloje

*Raktiniai žodžiai: administravimas, giminių sodybos, klasterinis metodas, valdymas.*

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