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THEORETICAL AND METHODOLOGICAL BASIS OF ORGANIZATION OF PRODUCTION BASED ON CLUSTER METHOD

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Abstract: The article examines the theoretical and methodological foundations of organizing production on the basis of a cluster and examines the features of the application of this method in ensuring industrial growth. The article provides an overview of scientific opinions of economists from developed countries on the state and direction of development of cluster policy. At the same time, the process of clustering in the EU countries has been analyzed. Some disadvantages of low clustering of industrial enterprises are revealed. Ways to solve these problems are also presented.

Keywords: cluster, industry, theoretical foundations, methodological foundations, competitiveness, foreign experience, enterprises, production and industrial structures, regional integration, complex.

Introduction

Recently, the most frequent use of the word "cluster", "clustering" in our daily life has been observed. Despite the fact that this term is a new definition in the economy of Uzbekistan, foreign developed countries already have rich experience in organizing and developing economic clusters.

In the national economy of Uzbekistan, in several priority sectors, especially in the cotton industry, work is underway to organize production according to this method - a group of enterprises united in a single technological chain, where science, education and production are mutually integrated. In this integration, primary raw materials go through all stages of processing step by step, added value is added and turns into high quality end products.

We know that a cluster is a technological chain that includes the entire process, starting from the primary processing of raw materials and ending with the production of finished products from it. It will help to reduce costs in the cost of goods for transportation costs, increase the production of finished products, which have a higher cost than raw materials.

In this regard, the creation of clusters is an urgent issue in the development of intersectoral relations in enterprises of the industrial complex. The industrial cluster will become economically profitable for market participants, it will directly lead to an increase in production capacities, which in turn contributes to an increase in the volume of production, improvement of economic relations and an increase in economic efficiency.
At the same time, there is a need for a detailed study of the theoretical and methodological foundations of organizing production by the cluster method, strengthening the legal foundations of the functioning of industrial clusters.

**Literature review**

The tasks of formation and functioning, as well as the introduction of the cluster method in their management of the competitiveness of enterprises are devoted to the works of foreign scientists of economic science such as: A. Marshall [1], M. Porter [2], A. Weber, S. Rosenfeld [3], P. Krugman, D. Solye, E. Dahmen [4] and others, as well as scientists from the CIS countries researchers: A.N. Oleinik, N.V. Smorodinskaya [5], D.D. Katukova, EG Karpova [6], IN. Kolosovsky, E.V. Ivanova [7], A.A. Nastin, Yu.V. Yaremenko, A. Shastitko and others.

The founders of the emergence of the theory of "cluster" and the most popular researchers in this area are A. Marshall and M. Porter. It is necessary to note the significant scientific works of these two academic economists in the emergence and development of the world concept of clusters.


Despite the fact that there is a wide economic literature devoted to the consideration of various aspects of economic clusters and their role in the development of the national economy, a number of problems still need further research. There are different opinions and definitions in the interpretation of its categorical concepts, there is a deviation in the correct organization of quantitative and qualitative components that impede the transition of domestic enterprises to the world path of development [18].

The available studies, despite the great scientific and practical significance, have a fragmentary feature that manifests itself in the consideration of one or several regulatory mechanisms, which confirms the need for further research in the field of state regulation of the agrarian sector of the economy in modern conditions of interfarm relations along the technological chain of production of finished products based on the cluster [19].

**Analyzes and results**

There are different opinions and definitions to the term "cluster" of scientists-economists studied and studied problems related to the clustering of production. In table 1, based on the results of the study and familiarization with foreign economic literature, the authors provide some of the most appropriate definitions of famous scientists for this scientific category.
Table 1: Definitions of the term "Cluster" of world scientists and economists

<table>
<thead>
<tr>
<th>Authors</th>
<th>Definition of the term &quot;Cluster&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. Porter</td>
<td>A cluster is a group of interrelated and complementary companies, institutions operating in a single geographic region in specific areas.</td>
</tr>
<tr>
<td>J. Swan</td>
<td>Cluster - a group of companies located in one geographic area and forming a single network.</td>
</tr>
<tr>
<td>S.V. Zhirkova</td>
<td>A cluster is a stable partnership of interconnected enterprises, institutions, organizations, individuals, and it can have a potential that exceeds the simple sum of the potentials of its individual components.</td>
</tr>
<tr>
<td>N.V. Smorodinskaya</td>
<td>A cluster is a production agglomeration, and they are a network alliance of firms and related organizations that enter into interactive cooperation at various stages of the value chain.</td>
</tr>
<tr>
<td>A.A. Nastin</td>
<td>A cluster is a system of geographically concentrated, interconnected, mutually complementary market entities belonging to various industries (agricultural enterprises, MF, private household plots, peasant farms, processing enterprises, housing and communal services, MA,</td>
</tr>
</tbody>
</table>
The data show that, until today, industrial clusters have been developed in many sectors of the economy in almost all states, regardless of their level of economic development. In developed countries (EU, USA), they have become a natural stage in the evolution of industrial production methods, and in developing countries (China, India, Argentina), clusters are the main way to achieve a world level in the formation of various sectors of the economy and enter international markets. According to the European Cluster Observatory [15], in 2020, in 28 countries of Western and Eastern Europe, there were 2,301 clusters in various sectors of the economy, with a total of 42 million employees. At the same time, 11.5% of them work in the agro-industrial complex, employing 4.5 million people.

Table 2

The number of active clusters in the EU countries identified by the European Cluster Observatory for 2015-2020

<table>
<thead>
<tr>
<th>EU countries</th>
<th>The number of clusters in various industries, units</th>
<th>The total number of people employed in industry clusters, people</th>
<th>The number of cluster in the agro-industrial complex, units</th>
<th>The total number of people employed in agro-industrial clusters, people</th>
<th>Average number of employees per 1 agro-industrial cluster, people</th>
<th>Share of agro-industrial in the total volume of sectoral clusters,%</th>
<th>Share of agribusiness workers in total employment in industry clusters,%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>107</td>
<td>957724</td>
<td>8</td>
<td>86740</td>
<td>10843</td>
<td>9,20</td>
<td>9,06</td>
</tr>
<tr>
<td>Belgium</td>
<td>75</td>
<td>780712</td>
<td>5</td>
<td>58739</td>
<td>11748</td>
<td>7,69</td>
<td>7,52</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>48</td>
<td>790239</td>
<td>22</td>
<td>426874</td>
<td>19403</td>
<td>45,83</td>
<td>54,02</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>182</td>
<td>4730155</td>
<td>7</td>
<td>99007</td>
<td>14144</td>
<td>3,85</td>
<td>2,09</td>
</tr>
<tr>
<td>Hungary</td>
<td>59</td>
<td>773979</td>
<td>11</td>
<td>161543</td>
<td>14686</td>
<td>18,64</td>
<td>20,87</td>
</tr>
<tr>
<td>Germany</td>
<td>334</td>
<td>6693224</td>
<td>14</td>
<td>371204</td>
<td>26515</td>
<td>4,46</td>
<td>5,55</td>
</tr>
<tr>
<td>Greece</td>
<td>95</td>
<td>889570</td>
<td>36</td>
<td>299431</td>
<td>8318</td>
<td>45,00</td>
<td>33,66</td>
</tr>
<tr>
<td>Denmark</td>
<td>60</td>
<td>788929</td>
<td>3</td>
<td>91546</td>
<td>30515</td>
<td>10,00</td>
<td>11,60</td>
</tr>
<tr>
<td>Ireland</td>
<td>10</td>
<td>346641</td>
<td>1</td>
<td>42713</td>
<td>42713</td>
<td>10,00</td>
<td>12,32</td>
</tr>
<tr>
<td>Iceland</td>
<td>5</td>
<td>33844</td>
<td>1</td>
<td>4498</td>
<td>4498</td>
<td>20,00</td>
<td>13,29</td>
</tr>
<tr>
<td>Spain</td>
<td>151</td>
<td>4488405</td>
<td>35</td>
<td>644854</td>
<td>18424</td>
<td>23,18</td>
<td>14,37</td>
</tr>
<tr>
<td>Italy</td>
<td>234</td>
<td>6165837</td>
<td>13</td>
<td>384460</td>
<td>29574</td>
<td>5,56</td>
<td>6,24</td>
</tr>
<tr>
<td>Netherlands</td>
<td>103</td>
<td>1201176</td>
<td>12</td>
<td>96031</td>
<td>8003</td>
<td>14,46</td>
<td>7,99</td>
</tr>
<tr>
<td>Norway</td>
<td>45</td>
<td>330196</td>
<td>1</td>
<td>4535</td>
<td>4535</td>
<td>3,33</td>
<td>1,37</td>
</tr>
<tr>
<td>Poland</td>
<td>169</td>
<td>2117813</td>
<td>19</td>
<td>413242</td>
<td>21750</td>
<td>11,80</td>
<td>19,51</td>
</tr>
</tbody>
</table>
As the data from Table 2 show, most clusters operate in the national economy of Germany, followed by Italy, Great Britain, France, Poland and Spain, that is, the largest economic and industrial countries. The same countries, as well as Romania, the Netherlands and Portugal, have an advantage over other countries in terms of the number of people working in these groups. However, in terms of the size of the clusters themselves, two countries - Spain and Lithuania - are leaders in terms of the number of employees, but this can also emphasize the low mechanization of labor. However, in terms of the total number of agro-industrial clusters, it is the leader among European countries, Greece and Spain, Bulgaria and France. However, in two European countries, Malta and Luxembourg, there are no agro-industrial clusters at all, since these two countries differ in the number of clusters in other sectors of the economy. At the same time, in terms of the share of agro-industrial clusters among other clusters, Bulgaria and Greece are leading in terms of significant differences from other European countries, as well as in the total number of people working in agricultural clusters. At the same time, Lithuania, Ireland, Romania and Denmark also have powerful agro-industrial groups with a large number of workers, but possibly with insufficient equipment.

In recent years, in an effort to adopt advanced experience, cluster methods began to take root on Russian soil, which resulted in the creation of a large-scale all-Russian integration project "PARK: Industrial and Agricultural Regional Clusters" under the auspices of the Non-Commercial Partnership "Innovation Center". The main task of the project is to create a modern innovative and technological structure for a full cycle of raw materials processing, with the maximum use of energy-saving, bio- and nanotechnologies. The structure of the project unites 4 clusters: agro-industrial, petrochemical, silicon and timber, which are closely interconnected and provide each other with raw materials and products necessary for work. Each constituent entity of the Russian Federation, connected to the project, will be able to form on its territory all or some of the clusters proposed by the program [16]. Already, 4 regions have become participants in the PARK agro-industrial project: Omsk, Rostov, Saratov regions and Stavropol Territory [17].
In modern Russian conditions, the development of innovative enterprises remains a key area in the emergence of new opportunities for economic growth in high-tech industries. The problems of practical implementation of an innovative approach to the modernization of regional economic systems are actualized by the need to accelerate the implementation of the import substitution policy and increase the production of high-tech products.

Distinctive features of the clustering of the Russian economy is the provision of infrastructure and investment support for innovative processes. Today, in Russia there are bio and nanotechnological, agro-industrial, petrochemical, silicon and forestry clusters. Cluster policy implemented in Russia in areas such as government support in the form of tax incentives, initiation in the creation of large-scale projects, etc.

**Conclusions and recommendations**

Based on the essence, content and emergence of clusters, we can draw some conclusions. As an association of enterprises and organizations, the cluster has the following most characteristic features:

- integration of production facilities, resources, and other competitive advantages;
- combination of internal cooperation with competition;
- the presence of certain and stable relationships along the technological chain;
- the presence of subjects from different sectors of the economy in the list of cluster members, linked by some common goals, but at the same time retaining independence (autonomy in decision-making and property rights to assets);
- the emergence of a large leading company that determines the long-term economic, investment and other strategy of the entire cluster;
- the simultaneous existence of unity and the contrast of interests of the participants (which comes from their cooperation and competition).

In conclusion, as the world experience has shown us, in the implementation of a technological breakthrough, an important role is assigned to the process of regional integration of companies and organizations performing various functions (from research work and personnel training to production processes and product transportation) and united by a single technological chain. The process, the result of which is a high-tech product, created by the joint efforts of all participants in this process. The most expedient form of their integration is a cluster. The formal reason for its creation may be a regional program, the implementation of which will lead to the consolidation of the interests of the enterprise, management bodies, consulting and financial organizations, and educational institutions. In this case, the effect will be achieved by improving the situation on the market of high-tech products with competition not between individual enterprises, but between regional production and research and production complexes, which will reduce transaction costs due to technological and scientific production cooperation of companies.
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