

FORMATION OF “INFOSTAT UKRAINE-POLAND” TRANSBOUNDARY CLUSTER – IMPORTANT FACTORS OF PROGRESSION AND PERIFERATIONS OF POLAND-SLOVAK-UKRAINIAN BORDER

Palinchak M. M.

INTRODUCTION

Due to the growth of globalization, the countries' governments keep playing a determinative role in the stimulation of developing rational policies concerning progress and making necessary institutions for the realization of their policies. In his monograph “Clusters in the global economy”, S.I. Sokolenko notes: “Government plays quite a specific role in the course of creation and improvement of network structures of clusters. Here rather important is an active governmental policy on the formation of efficient foreign relations, as well as the development of collective actions in different spheres of the economy with the use of information technology”¹. The further cited leading national scientist on problems of clustering states that the role of the government in this spheres is difficult to overestimate since²:

- firstly, it is to level the imperfections, existing in the market economic system, which can cause constraints on innovation and hinder clustering...;
- secondly, state efforts are necessary to achieve a positive external effect from the implementation of R&B (research & business) results, especially when they are the outcomes of work of alliances or clusters;
- thirdly, the desire to obtain a much higher economic profit rate from the efforts made in government research is another reason for a government to promote the occurrence of clusters;
- fourthly, the desire to strengthen business activity in the country or region in high-tech (high technology) branch is another factor in the development of clustering.

In the scientific article “Cluster policy of the European Union”, Doctor of Economics, Professor V.I. Chuzhikov and the Ph.D. in Economics, associate professor O.D. Lukyanenko note that “the evolution of categorical and methodological apparatus of the theory of clusters started in the 19th century with

¹Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 181.

²Значена праця. – С. 184, 185.

the advantages of the formation of agglomerations in economic activity considering some specialization and the availability of skilled labor, which were described by A. Marshall. Agglomerative ideas were supported in the 20th century by J. Schumpet, who expressed an idea of “accumulation” or clustering of industry... An important contribution to the new understanding of clusters was made by famous Western researches J. Harrison, R. Sabella, and M. Porter”³.

Further on, the cited above scientists claim that:

- a new impulse in the research of clusters, in particular in the EU (in the context of intensifying crisis in the integration union) was made by the attempts of the European Commission (EC) to maximize the essence of the common technological policy, which was often viewed through the prism of competitiveness of innovative structures;

- among the latest publications, one should use the research of R. Martin and P. Sansley, who pay attention to the life cycle of the cluster, J. Rarra, who analyzed features of spatial-cyclic modeling of clusters, as well as national scientists M. Khmary and V. Kulyavets studied out the features of the development of some clusters in the EU. Today the issues of the efficiency of the realization of European Union policies, features in the presence of cross-country imbalances and asymmetries, uprising global instability became more active;

- besides, it becomes evident that the EU-tested cluster development models need to be applied for innovation and investment development in Ukraine. In this context, the following tasks need to be addressed above all:

- 1) identifying the nature and features of modern cluster development;
- 2) establishment of criteria for sectoral diversification of cluster models in the EU;
- 3) valuation of the nature of the institutional model of EU cluster policy.

1. Scale of clustering in the world economy

The most active supporter of the cluster model of development in the world economy is considered to be M. Porter, who offered several interpretations of this phenomenon. Let us mention one of M. Porter’s definitions in which he already starts understanding clusters as “... a system of interconnected firms and institutions, which is more than just an amount of its constituent elements”⁴.

V. I. Chuzhikov and O. D. Lukyanenko also mention that quite an interesting industry relationship between clusters in the EU was established by

³ Чужиков В.І. Кластерна політика Європейського Союзу / В.І. Чужиков, С.Д. Лук’яненко // Економіка України. – 2013. – № 2 (615). – С. 81-91.

⁴ Чужиков В.І. Кластерна політика Європейського Союзу / В.І. Чужиков, С.Д. Лук’яненко // Економіка України. – 2013. – № 2 (615). – С. 83; Портер М. Международная конкуренция / М Портер. – М.: Международные отношения, 1993. – 896 с.

national researcher V. Kulyavets, who succeeded in calculating the proportion of food clusters in the overall structure. Thus, in the general number of clusters in the EU the leading positions are taken by Germany, Italy, France, Sweden, Denmark, Finland that overtake 66,5% of all created in the EU clusters, but among food clusters, which traditionally are considered to be low-tech ones, the leadership belongs to Italy and France. Austria, Germany, Belgium, Finland, Poland, where 64 out of 82 clusters or 78 % of all food clusters in the European Union are located, are far behind the leaders. Herewith the portion of Italy exceeds 30 %. Leadership as to foodstuff output (winery, butter and cheese making, meat sectors of national production) in the cluster system of the EU is a notable advantage for Italy and France, where the specific weight of created food clusters is almost 50 %.

The scientists cited above also affirm that during the financial crisis of 2008-2009 the rate of decline in the production of food industry of the European Union was identified at the level of 4 %, but they were not as drastic as in the innovative clusters of production (at 10-15%). Herewith one should take into account that such giants of the European food cluster business as “Nestle”, “Heisen”, “Unilever”, “Danone”, “Laktiale” most actively used the cluster advantages during the crisis⁵.

The scale of clustering in the world economy is increasing. According to the information given by the Cluster Observatory, there are more than 3 thousand clusters in the EU, in which more than 40 % of working labor is used. Cluster statistics for individual EU countries are presented in Table 1.

Table 1

Cluster statistics for individual EU countries⁶

Countries	Number of clusters	Countries	Number of clusters
Great Britain	168	Netherlands	20
Germany	32	France	96
Denmark	34	Finland	9
Italy	206	Poland	161
Total	440	Total	286
For reference: USA	380		

⁵ Чужиков В.І. Кластерна політика Європейського Союзу / В.І. Чужиков, С.Д. Лук'яненко // Економіка України. – 2013. – № 2 (615). – С. 86.

⁶ Марчук О.І. Кластерная стратегия инновационного развития экономик Беларуси и Украины / О.И. Марчук, Т.А. Яшева, Н.Т. Рудь / Проблеми інноваційного розвитку економіки України: Збірник наукових праць з актуальних проблем економічних наук // Наукова організація «Перспектива». У 2-х частинах. – Дніпропетровськ: Видавничий дім «Гельветика», 2014. – Ч. 2. – 312 с.

According to the information given by the Cluster Observatory, which is presented in Table 1, the general number of clusters in the analyzed group of the EU countries amounts 726 units, of these, Italy has 206 units (the first place among the analyzed countries), the second place is taken by Great Britain (168 units), the third– by Poland (161 units) and the fourth– by France (96 units).

The leadership of Italy in the development of territorial cooperation is mentioned in several scientific sources. In particular, the economy of many regions of this country is formed as a cooperative network of “industrial districts”, which, as mentioned by S.I. Sokolenko, creates a special way of public life. The cited scientists affirm⁷ that:

- In his famous book “The Third Wave” Alvin Toffler named “industrial districts” (further ID) of Italy “the wave of the 21st century”;

- it is also significant that the popularity of these structures in the world became so great that, before becoming President of the USA, Bill Clinton in 1992 traveled on purpose to Emilia Romagna to get acquainted with this “economic wonder”;

- hundreds of books and tens of conferences are dedicated to “industrial districts”;

- Italy is considered to be a classic country of small businesses. More than 4 million firms are registered in it, out of which only 2 % are considered to be big, that is to have 1000 or more employees. The majority of firms belong to small ones (up to 100 employees) and very small (up to 20 employees);

- as defined by the Italian Institute of Statistics (ISTAT) “industrial district” *is an economic unit on a local territorial basis, where communities of people and several medium-sized small enterprises that take part in the same production process, interact.* In other words, these are clusters in Italian;

- There are more than 260 “industrial districts” in Italy, with more than 80,000 people involved. If we add to these enterprises related enterprises and enterprises located in the territories of other districts, including the sphere of services, we can say that more than 1.2 million of small and medium-sized enterprises are operating in the ID. The number of employees at these enterprises varies from 4 to 6 million people. Most ID are mono-sectoral. Most of them are concentrated on the production of clothing or textiles (70), furniture and household goods (40), machine tools and other equipment (32), footwear and leather goods (27), food (17), jewelry (4) and other products. (10).

A comparative analysis of Table 1 data and S.I. Sokolenko’s monograph “Clusters in the Global Economy” shows significant differences in the presence of clusters (“industrial districts”) in Italy. It should be noted that at the initiative

⁷Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 207, 209.

of the Minister of Forestry of the Ukrainian SSR Grunyanskiy I.I., a native of the Transcarpathian region, in the regions of the Ukrainian Carpathians, there were created forestry plants, many of which were functioning as clusters. In particular, in the Transcarpathian region the production of furniture sets at Svalyava Forestry Plant, Mukachevo Furniture Factory, Teresvyansky Woodworking Plant, Kostrynsky Kitchen Furniture Factory was established. In addition, workshops for the production of wood-chip boards for furniture enterprises in the region and many enterprises of Ukraine operated in the Svalyava Forestry Plant and Teresyansky Woodworking Plant. Therefore, the experience of Italy in clustering its economy is of great importance for the restoration of cluster type furniture complexes in the Transcarpathian region and the creation of new clusters.

Germany is one of the leading technology creators in the world and the largest technology provider in Europe. According to scientific sources, the latest technologies and globalization have changed the world and the nature of economic competition, which has taken on new forms. Basically, these changes concern the ways of generating, transferring and adapting knowledge. Knowledge in modern conditions is recognized as the basis of productivity and economic growth. The engine of knowledge and economic development is information. The efficiency of country's innovation system and its potential used for improving economic growth play a major role in the transmission and use of information. It is no coincidence that Germany has significant competitive advantages in technology and know-how. In this regard, it should be noted the successes and importance for the German and world economy of German FRG⁸ clusters, as stated in their speeches by representatives or executives of leading German companies at the German-English Forum in September 2003, noting:

1. About the significant success of the clusters of Munich in the field of information technology and in the opinion of von Peter, Munich in this is almost equal to the Silicon Valley (USA) and similar clusters of Greater London:

1.1) The head of Siemens also said that the European Union should shift its industrial policy towards a significant increase in innovation and research costs, as well as provide opportunities for small and medium-sized companies to master the best technologies and approaches in the work within the regional clusters of relevant types of business;

1.2) The European industrial policy must be reformed, first and foremost, by significantly improving the EU patent system, which is 8 times

⁸ Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 470-472.

more expensive under the current conditions and has a more complex registration system than that operating in the US. According to von Pierre, CEO of Siemens, the competitiveness of European production is also reduced due to the high cost of labor. The aforementioned circumstances are forcing the European manufacturers to seek low-cost countries for the corresponding production processes, which causes relocation of production to Asian countries, especially to China. This leads to paralysis of many outsourcing industries;

1.3) Siemens, the sixth largest manufacturing company in the world, has radically changed its market behavior strategy over the past few years, focusing its market operations not only outside Germany but also outside Europe. The German market part in the supply of Siemens products in the last 2-3 years is no more than 25% of the total sales. According to von Pierer, both Siemens and other European manufacturers need to significantly increase research costs and, first and foremost, in the field of nano- and biotechnology, in order to secure their priorities in the world markets. At the beginning of the 21st century, Germany spent only 2, 5% of total GDP on it, which secured it only 7th place in the world ranking;

1.4) The main recommendation to get out of depression is a need for all EU governments to fully support the development of cluster structures consisting of small, medium and large companies tied to specific territories and regions. Moreover, the EU strategy should focus on the development of networked cluster structures and stimulate innovation, as well as ensure the training of skilled workforce with active involvement of local universities in this process.

2. Another high-tech star is the high-tech cluster in Hamburg, with media start-ups taking the lead.

Internshop specializing in e-commerce software development became the most well-known here. The company's shares are listed on both the Frankfurt Stock Exchange and the largest stock exchange in the world, Nasdag. Although the company was partially hit by the economic downturn of 2001 in the IT sector, it still retains its leading position in the cluster and continues to be an example for local businesses.

3. The third new star in high technology is the high-tech cluster in Dresden. It is known not only for its technical university, which has over 22,000 students studying in 66 different specialties. The Dresden Cluster also includes the Siemens Technology Center manufacturing chips and panoramic cameras ... As it became known, the high-tech AMD (USA) cluster, realizing the benefits of the Dresden cluster and the city's proximity to Eastern European markets, created a manufacturing company here of semiconductors by investing DM 2.9 billion in its development. In Germany, a variant of the "third way" was implemented, a distinctive feature of which became its national orientation

at openness to the global economy. Due to this, a rather high level of competitiveness increase and the country's readiness to create networks were achieved. Thus, in 2001, Germany ranked: in the country's credit rating – 2nd place, and in the quality of business environment – 4th place⁹.

2. Experience of economy clustering and possibility of its use for economy of Ukraine

Germany's experience in clustering its economy represents both scientific and pragmatic value for Ukraine and its regions in the Ukrainian part of the Carpathians with regard to the system and management of the German Protected Areas. In particular, Ph.D., prof. F.D. Gamor notes that at the meeting of the UNESCO World Heritage Committee, held on June 19-29, 2011 in Paris, the decision was made to expand the Ukrainian-Slovak object "Beech forests of the Carpathians" by five new clusters of Germany with an area of 4391 ha. They form the German part of the territory of four national parks (Yasmund, Murtitz, Chaynih and Kellerwald-Edersee) and the Schorfheim-Corin Biosphere Reserve. The new name of the object has also been approved: "Carpathian beech forests and ancient beech forests of Germany" (Slovakia, Ukraine, Germany). At the same 35th meeting of the World Heritage Committee in Paris, there was proclaimed that the "Ancient Forests of Germany" was included in the UNESCO World Heritage Lists within the existing Ukrainian-Slovak object "Beech Forests of the Carpathians". The success of the German colleagues is due to the active support of the staff of the Carpathian Biosphere Reserve and personally F.D. Gamor, who participated in numerous meetings, as well as a member of the expedition during the evaluation of the German clusters. Also during dominance, an integrated management system was developed to ensure the effective management of this extremely valuable tripartite transnational entity¹⁰. It should be noted that in the Heinik National Park the regime of protection and use of natural complexes is very similar to the protected regime in the Ukrainian nature reserves. It employs 63 professionals, including 25 rangers, with considerable experience in conserving natural ecosystems. Scientific research and systematic monitoring of natural processes have been established. At the expense of the local community, a unique information and tourism infrastructure has been created here, in particular, the famous not only in Germany ecological trail in the crown of trees, which is visited annually by hundreds of thousands of guests. Over one decade of use, more than one billion

⁹ WEF Knowhenge Navigator – Germany, 2003 // <http://www.wevorum.org.de>

¹⁰ Гамор Федір. Всесвітнє визнання букових пралісів Карпат: історія та менеджмент / Матеріали з нагоди десятиріччя утворення об'єкта Всесвітньої спадщини ЮНЕСКО «Букові праліси Карпат та давні букові ліси Німеччини». – м. Ужгород, Вид-во «ФОП «Сабов А.М.». – 2017. – 248 с.

euros¹¹ have been deposited in the local budget. Thus, on the European continent a unique international association of border areas of world importance was created, with a total area of 96072.4 ha (core zone 33630.1 ha), which covers the natural range of forest spread from beech (*Fagus sylvatica*) from the highlands of the Ukrainian Carpathians to the Baltic Sea coast in the German Rügen¹² archipelago. It is indisputable that the Ukrainian part of the site, consisting of the largest in Europe sites of beech forests of the Carpathian Biosphere Reserve and Uzhan National Nature Park within the Rakhiv, Tyachiv and Velikoberezniy areas, is almost 70% of its total area and is the only natural area an item in Ukraine that is on the UNESCO¹³ World Heritage List.

An important role in conservation plays an international cooperation of states on a bilateral basis, for example launched the project “Support to protected areas of Ukraine” for the use of German financial assistance for the development of nature reserves and national parks in Ukraine. In this regard, F. Hamor notes that on February 3, 2016, the Verkhovna Rada of Ukraine ratified a financial agreement between the Cabinet of Ministers of Ukraine and the Government of the Federal Republic of Germany on financial cooperation within the framework of the project “Support to the Protected Areas of Ukraine” dated April 10, 2015. The Ministry of Ecology and Natural Resources of Ukraine has been designated the recipient of the 14 billion euros allocated by the German Development Bank KfW. The main objective of the project is to improve the management status and success of selected reserves and national nature parks, enhance their cooperation with local communities, and increase the perception of the need to preserve the nature reserve fund in the public consciousness. The project is envisaged¹⁴:

- direct costs, primarily to fund activities to develop infrastructure and strengthening material-technical base on eight sites of natural protected areas in the Carpathian region;
- 1.2 million euros will be allocated to support local communities in their area of activity;
- the project was officially launched on May 1, 2016 and will last 6 years until April 2020. Key partners in the implementation of the project are the Ministry of Natural Resources of Ukraine, administrations of the protected areas, representatives of local communities and public organizations,

¹¹ Гамор Федір. Всесвітнє визнання букових пралісів Карпат: історія та менеджмент / Матеріали з нагоди десятиріччя утворення об'єкта Всесвітньої спадщини ЮНЕСКО «Букові праліси Карпат та давні букові ліси Німеччини». – м. Ужгород, Вид-во «ФОП «Сабов А.М.». – 2017. – С. 87.

¹² Гамор Федір. Зазначена праця. – С. 105.

¹³ Гамор Федір. Зазначена праця. – С. 107..

¹⁴ Гамор Федір. Зазначена праця. – С. 131-134.

specialized state institutions and selected through the international competition Consultant Consortium, which includes the German company “ATH GROUP AG”, World Nature Foundation (WWF), the Frankfurt Zoological Society, the Ukrainian Society for the Protection of Birds and its contracting partners (suppliers of goods and services, construction companies, non-governmental organizations and auditors);

- a phased approach will be used to implement the project activities on the ground. In the first stage, it will be implemented in the Carpathian Biosphere Reserve and Gorgany Nature Reserve, with the gradual involvement of other priority nature conservation areas.

At the seminar of the Ministry of Nature of Ukraine October 10-11, 2016 on the report of the initial phase of the project “Support for nature reserves of Ukraine” project manager of the Department of Energy and Natural Resources of the German Development Bank KFW Frank Murschel said that, unfortunately, in Germany, providing financial assistance to Ukraine is not a priority in the field of nature protection. Therefore it is extremely important during this project to achieve tangible positive results in the development and preservation of natural reserve fund in order to open up new opportunities for further German environmental investment in Ukraine.

The seminar also discussed the possibilities of financing, at the expense of the project, the restoration of the Museum of Forests and Alloys and the completion of the Rehabilitation Center for brown bears and other infrastructural objects in the Synevyr National Nature Park and other nature conservation areas for which design and budget documentation is already established¹⁵.

The experience of Italian and German clustering enables to make a number of generalizations. First of all, the experience of these industrialized countries of G7 has a comprehensive understanding of the importance to comprehensive processes of globalization and regionalization. The value of this experience is the presence of different approaches to the regional approach strategy and to achieving positive results in world markets through the effective use of cluster formations based on advanced technologies. It should be noted that if in the Italian clustering scheme a strong economic result is achieved through the effective consolidation of the efforts of SMEs and other small forms of business, then in the achievement of the German model of clustering own large companies occupying leading positions in the world economy make an important contribution. Subsidiaries of large German companies operate in the regions of the Ukrainian Carpathians, and in the Transcarpathian region the leading position is occupied by CJSC Eurocar. Subsidiaries of large German companies operate in the regions of the Ukrainian Carpathians, and in the

¹⁵ Гамор Федір. Зазначена праця. – С. 131-132.

Transcarpathian region the leading position is occupied by CJSC Eurocar. Considering that the organizational and legal foundations of conducting a protected matter are defined by the Law of Ukraine “On the Nature Reserve Fund of Ukraine” (1992) and legislative acts in accordance with it, which is why the NRF of Ukraine is considered as an integral part of the world system of natural territories and objects under special protection. In order to intensify Ukraine's participation in international cooperation on the protection and rational use of territories and sites of the NRF, it is necessary to¹⁶:

- intensify activities aimed at concluding multilateral and bilateral international agreements in the field of conservation;
- ensure the broad involvement of governmental and scientific institutions and non-governmental organizations in the implementation of international projects aimed at solving global environmental issues and developing conservation;
- create in the border areas interstate protected territories, especially nature reserves and national parks, to work with relevant international organizations the issue of better border nature reserves and national parks Ukraine biosphere status, activities of the Council of Europe with the award of the relevant diplomas;
- systematically analyze international experience in the development of nature conservation, conduct scientific forums and working meetings of Ukrainian experts in nature conservation with foreign colleagues;
- expand the training of Ukrainian conservationists abroad;
- promote the establishment of international and other conservation centers in Ukraine;
- enhance the participation of scientific institutions in the preparation of relevant international scientific publications;
- more actively promote international eco-tourism.

The above-mentioned requirements of the Prospects Program in Ukraine (“Reserves”) are clearly implemented by the management of the Carpathian Biosphere Reserve. We will also note that the Council of Europe awarded the European Carpathian Biosphere Reserve with a European diploma for the first time in Ukraine for outstanding achievements in the preservation of the border, cultural and historical heritage. On 4 July 2006, the Reserve was visited by Council of Europe expert from the Polish Institute for Nature Conservation, Ministry of the Environment, Jadwiga Sinkevich. She has comprehensively analyzed the activities of the CBR, met with its director, prof. F. D. Gamor, visited the Chernogirsk, Uhol, Kevlov border research departments and gave a

¹⁶ Екологія і закон. Екологічне законодавство України. У двох книгах. Книга 2; Відп. ред. акад. УЕАН В. І. Андрейцев. – К. : Юрінком Інтер. – 1997. – 574 с.

high assessment of the Reserve stated that its activities meet all the requirements of the Council of Europe. At the end of September 2006, UNESCO expert David Mikhalik and Professor of Zvolen Forestry University (Slovakia) Ivan Voloschuk visited Rakhiv to assess the forests of the Carpathians. UNESCO expert noted the extensive work done by Reserve team on participation in the project “Beech forests of the Carpathians”, which is of great state and political importance for Ukraine and our region¹⁷.

At the same time, it should be noted that there is no definition of the cluster category in both the Economic Encyclopedia¹⁸ and the Ecological Encyclopedia¹⁹. S. I. Sokolenko's monograph “Clusters in the Global Economy” generalized long-term experience in studying clustering problems, clarifies the problems of self-sufficiency of cluster mechanisms that allow to overcome crisis phenomena, more effectively solve socio-economic problems both at the municipal and regional as well as national levels²⁰. The above has already been mentioned about the role of German clusters in the territories and objects of ancient beech forests of the German Nature Reserve Fund, as well as about the unique information and tourism infrastructure, including the famous ecological path in tree crowns. However, even more interest in German nature conservation, forestry and other areas related to the activities of the Hainich National Park was caused by the Uholka Beech Forests. During September 1-4, 2015, guests from Germany studied with enthusiasm the patterns of functioning of the largest areas of beech forests in the world. They were particularly impressed by the five-hundred-year-old monumental beech trees, the karst bridge, and the wild, undisturbed condition of the Velika Uholka River Basin, which made the twenty-three-hour trek to the top of Mount Menchul and back²¹. Even this incomplete description of the Uholka beech forests gives us reason to declare the feasibility of creating a recreational and tourist cluster on the basis of the Uhol Forestry.

The inclusion of Carpathian beech forests in the UNESCO World Heritage List, according to the director of the Carpathian Biosphere Reserve,

¹⁷ Гамор Федір. Зазначена праця. – С. 38.

¹⁸ Економічна енциклопедія: [у 3 т.]. – Київ: Видавничий центр «Академія», 2002. / Голова редакційної ради: Гаврилишин Б. Д. (голова) [та ін.]. Т. 1 / [відп. редактор Мочерний С. В. та ін.]. – 2002. – 864 с.

¹⁹ Екологічна енциклопедія: У 3 т. / Головн. ред. А. В. Толстоухов та ін. – К.: ТОВ «Центр екологічної освіти та інформації», 2007. – Т. 2: С-Н. – 416 с.

²⁰ Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 2.

²¹ Гамор Федір. Всесвітнє визнання букових пралісів Карпат: історія та менеджмент / Матеріали з нагоди десятиріччя утворення об'єкта Всесвітньої спадщини ЮНЕСКО «Букові праліси Карпат та давні букові ліси Німеччини». – м. Ужгород, Вид-во «ФОП «Сабов А.М.». – 2017. – С. 87.

prof. F. D. Humor, on the one hand, opens up new opportunities for intensifying ecotourism activities, but on the other hand, it places increased demands on the protection and carrying out of more efficient and large-scale educational work and development of the necessary tourist infrastructure. The expert opinion of the International Union for the Conservation of Nature (IUCN) also emphasizes the fact that high levels of unemployment are observed among the local population (especially in rural areas), and many people go abroad for work. Wood is being harvested in the buffer zone for fuel, which is now impossible to stop. The local population, unfortunately, is not always aware of the difference between old-grown and commercial forests. Here, further unauthorized harvesting and irresponsible behavior of tourists (arson, clogging, poaching, etc.) are possible here. There are also possible unauthorized deforestation and irresponsible behavior of tourists (arson, clogging, poaching, etc.). Therefore, the World Heritage Special Recommendations provide for an integrated management plan to implement measures aimed at addressing these issues. It is also recommended to seek additional sources of funding, involve local residents, NGOs and all interested parties. It is no coincidence that the book "The World Recognition of the Beech Forests of the Carpathians: History and Management"²²:

- in this connection it is very important to take care of job creation in the adjacent to old-growth forests settlements, first of all, through the construction of hotels, restaurants and other infrastructure, to introduce alternative types of household heating (due to gasification or creation of technical and economic conditions for electricity use in Rakhiv and Tyachiv districts), asphaltting of roads leading to primeval forests (especially in Mala Uholka), etc.

- in order to intensify scientific and ecological and educational work, an International Ecological and Educational Center "Beech Forests of the Carpathians" should be established in Rakhiv;

- powerful information objects should also be built in Mala Uholka, Velika Uhla, Shyrokyi Luh and other arrays;

- solving of these and other problems is possible only with the adoption of a special resolution of the Cabinet of Ministers of Ukraine and financial support of international organizations.

The historic Mukachevo Conference, held from 13 to 17 October 2003, under the auspices of the Council of Europe, the World Wildlife Fund (WWF), the International Union for the Conservation of Nature (IUCN) and the International Union of Forestry Research Organization (IUFRO), played an important role in the conservation and study of Europe's beech forests. The Carpathian Biosphere Reserve and the Swiss Federal Institute for Forest, Snow

²² Гамор Федір. Зазначена праця. – С. 41.

and Landscape Research were the direct organizers of this conference. At this conference, Mukachevo's statement and appeals were adopted²³. In particular, the statement sets out a general picture of the state of natural forests in the temperate zone of Europe. At the same time, the central task for scientists and environmentalists should be to study their structure, dynamics of growth, biodiversity and socio-economic values, as well as problems of their protection.

The Mukachevo Conference, attended by about 250 representatives of forest science from 26 countries, appealed to all interested parties to inventory forests and natural forests on the basis of unified methods, to intensify scientific research and monitoring in order to use the data obtained in practical forestry education, etc.

Of particular significance was the grand opening on June 7, 2013, in the village of Mala Ugolka, Tyachiv district of the information-tourist center "Beech forests – UNESCO World Heritage Site". According to the leading scientist of the CBO Victoria Bundyak, this object "was created on the initiative and under the direct supervision of Professor Fyodor Gamor, who together with a group of specialists of the reserve developed his thematic-exposition plan, design and informational content..." A special highlight is the exhibition hall, which creates the illusion of being in a beech forest. Banner wallpapers reflect the age-old beech trees, covered with ivy garlands, the old forest cuts through the mountain stream, animals from the Carpathian forests meet curiously from outside the trees. The famous Karst Bridge of Ugolka seems to hang over the visitors in all its greatness, and birds float beneath the ceiling, decorated by the blue sky. Here, in the silence of the simulated beech forest, visitors can watch videos of the ancient Carpathian beech forests. From this hall visitors are fascinated by the mystery and greatness of the beech primeval forest, amazed and convinced of the need to preserve it²⁴.

Of scientific interest is a comparative analysis of the dynamics of the Gross Domestic Product (GDP) growth (decline) for the four EU countries belonging to the G7 (UK, Italy, Germany, France) and the Carpathian Euroregion countries which was established in 1993. It included Hungary, Poland, Ukraine, Slovakia, and later Romania. The purpose of the Carpathian Euroregion is the coordination of economic and foreign economic activity, creation of favorable conditions for integration²⁵. The data of such analysis on the dynamics of growth rate (GDP decline) for the period from 2008 to 2017 in the context of the above mentioned countries is reflected in Table 2.

²³ Гамор Федір. Зазначена праця. – С. 72, 73.

²⁴ Гамор Федір. Зазначена праця. – С. 78.

²⁵ Розміщення продуктивних сил: Підручник / В.В. Ковалевський, О.Л. Михалик, В.Ф. Семенова. – 3-тє вид., випр. і доп. – К.: ТОВ «Знання», КОО, 2001. – 353 с. – (Вища освіта XXI ст.).

Table 2 shows that the global financial crisis of 2008-2009 had a negative impact on the European group of countries of the Big Seven. These countries have been members of the European Union since its formation in 1992. In the United Kingdom, Italy and France, crisis phenomena have negatively affected rates of GDP decline in 2008-2019 and in Germany in 2009. Subsequently, in the analyzed group of countries, a declining trend in GDP emerged in Italy in 2012-2013.

Table 2

Gross Domestic Product Growth (Decrease) Rate for the Analyzed Group of Countries from 2008 to 2017 (2008-2009 by the Purchasing Power Parity (PPP) of 2005, 2010-2017 by the PPP of 2010; percent to the previous year)

Groups of countries	2008	2009	2010	2012	2013	2014	2015	2016	2017
I. The EU's G7 countries									
United Kingdom	-1,0	-4,0	1,7	1,5	2,1	3,1	2,3	1,9	1,8
Italy	-1,2	-5,5	1,7	-2,8	-1,7	0,1	1,1	0,9	1,5
Germany	1,1	-5,1	4,1	0,5	0,5	1,9	1,7	1,9	2,2
France	-0,1	-3,1	1,9	0,3	0,6	1,0	1,1	1,2	2,2
II. Carpathian Euroregion (CE) countries									
Poland	5,1	1,6	3,6	1,6	1,4	3,3	3,8	3,0	4,6
Romania	-6,1	-1,1	-2,8	1,2	3,5	3,1	4,0	4,8	6,9
Slovakia	5,8	-4,9	5,0	1,7	1,5	2,8	3,8	3,3	3,4
Hungary	0,9	-6,8	0,7	1,6	2,1	4,2	3,4	2,2	4,0
Ukraine	2,3	-14,8	4,1	0,2	0,0	-5,6	-0,8	2,4	2,5

* Grouped by source²⁶

Among the countries of the Carpathian Euroregion bordering Ukraine, the longest rates of GDP decline during 2008-2010 were in Romania and in Slovakia and Hungary only in 2009. The largest GDP decline among the two analyzed groups of countries in 2009 was observed in Ukraine (-14.8). In 2014-2015, Ukraine again experienced negative trends in GDP decline (-5.6% and -0.8% respectively).

At the same time, among the group of countries of the Carpathian Euroregion, the experience of Poland and the activities of the Government of

²⁶ Статистичний щорічник України за 2012 рік / Державна служба статистики України. – Київ: ТОВ «Август-Трейд». – 2013. – С. 535, 536. Статистичний щорічник України за 2017 рік / Державна служба статистики України. – Київ: Державне підприємство «Інформаційно-аналітичне агентство». – 2018. – С. 525, 526.

this country deserve attention, since the crisis phenomena of the global financial crisis, as can be seen from Table 2, did not appear here, and on the contrary the GDP growth in 2008-2009 was 5.1% and 1.6%.

Sokolenko claims that in New Europe, Poland is well known in modern economic history for being one of the countries of the socialist community to strongly reject the proposed palliative forms of market socialism and has set out to create a full-fledged market economy in the country. It was Poland who was the first country to legislate on a program of market reforms after the Tadeusz Mazowiecki government of Solidarity formed in 1989. On January 31, 1990, a program of radical reforms designed by a team of economists under the leadership of Lelec Balcerovich, who, as Vice Prime Minister, led the implementation of the economic transformation program, later known as “shock therapy” began²⁷. Noting Poland's progress in transforming its economy, Sokolenko states that success has largely been achieved thanks to the activity of SMEs and the start of clustering... SMEs provide about 50% of Poland's GDP, 50% of exports and 60% of country's imports²⁸. The quoted domestic scientist states that in addition to rather modest local budgets, sources of financing for network structures of SMEs, clusters and individual firms in Poland also include foreign investments and loans, voluntary contributions and international technical and economic assistance²⁹.

According to the United Nations Economic Commission for Europe (UN / ECE) and national statistics of countries, Poland exceeded GDP of 1989 in 1995, Slovakia in 1998, Hungary in 2000. In 2001, the average GNP of CIS countries was still 40% lower than the corresponding level of 1989, and for some countries, including Ukraine, the GNP of 2002 was less than half of the volume produced over ten years ago. The governments played a significant role in the success of these countries. They were able to use the most effective methods of establishing a dialogue between the public and private sectors in various aspects of trade, investment, transport, energy network, environmental protection and industrial cooperation. And yet, the most significant contribution was made by these governments to the institutionalization of the market environment in their countries. It is also worth noting that:

- Poland's success in transforming its economy was largely achieved through SMEs and the start of clustering, with annual GDP growth of over 5% in the 1990s, which was the highest among Central European countries that became EU members in 2004³⁰;

²⁷ Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 315.

²⁸ Соколенко С.І. Зазначена праця. – С. 318, 319.

²⁹ Соколенко С.І. Зазначена праця. – С. 322.

³⁰ Соколенко С.І. Зазначена праця. – С. 318-319.

- economic transformations in Hungary, as in Poland, were carried out on the basis of clustering. In particular, in the early 1990s, industrial parks (IPs) began to be actively created in Hungary, which, based on the model of such IPs in industrialized countries, emerged from the initiative of local administration and business circles. In the early 2000s, more than 100 IPs were operating in all regions of Hungary, bringing together 656 companies with 60,000 employees. The dynamic activity of the IPs has become the basis for the intensification of the creation and development of clusters in Hungary. Western Pannonia has the leading position in the clustering process among Hungary's seven regions. The greatest pride of this region is the dynamic development of the Pannonia Business Initiative program, which has become a model of regional integrated economic development for Hungary. The development of the PANAC automotive cluster became the core of this program. At the same time, PANFA's woodworking and furniture manufacturing, electronics and tourism, related to thermal mineral water, clusters are being developed. The activities of these clusters are being deployed within the framework of a common regional platform supported by the Regional Development Agency and a regional holding, which includes three enterprise development funds, county labor centers, as well as a network of industrial parks in Western Pannonia³¹;

- Slovakia's compliance with the conditions for accession to the European Union was complicated by the fact that it, like other CEE countries, had to solve complex problems of democratization and transition to a market economic system during this period. These problems were connected with privatization of state property and restructuring of the banking system, creation of a system of local self-government, reforming of the judicial system, etc. The Association Agreement between the European Union and its Member States, on the one hand, and the Slovak Republic (SR) as a sovereign state after the division of Czechoslovakia into two independent states, on the other, was signed at the highest level on 4 October 1993 in Luxembourg. Article 1.2 of the Association Agreement with the Slovak Republic outlines its specific goals³²:

1. Create the necessary conditions for political dialogue that will foster close political relations between the parties of the treaty. The dialogue should facilitate the process of full integration of the SR into the EU. It will primarily address security, as well as the gradual convergence of positions of the two sides on international issues. In addition, the EU is committed to fostering close relations between the CEE countries as a whole and the Visegrad countries in particular.

³¹ Соколенко С.І. Зазначена праця. – С. 302, 304, 308.

³² Україна в системі європейської інтеграції [текст]: Монографія. Навч. посібник / М. Палінчак, В. Приходько, В. Химинець та ін. – Ужгород: ТОВ «РІК-У», 2016. – 344 с.

2. Promote trade and harmonious economic relations between the Parties and thereby promote the dynamic development and prosperity of the Slovak Republic.

The achievements of industrial Slovakia's clustering look a little more modest than those of its neighbors, Poland and Hungary. At the same time, points of high investment activity in the Ukrainian-Slovak border have formed, which need the support of the governments of both countries, in particular in such economic activities as³³:

- the development of tourism and recreation, the protection of the natural environment are considered by the bodies of state executive power and local self-government in the border regions of Ukraine and Slovakia as priority areas of activity and cross-border cooperation. Previous experience, the presence of a network of international, national and regional programs in this field make it possible to consider the creation of an international Tatra-Carpathian tourist-recreational cluster and a congress-tourism center at the Ukrainian-Slovak border. This project can be realized as a result of active activities of business circles, tourist and sports organizations of Slovakia and Ukraine, which could most accurately apply their experience and technologies acquired during the Tatras Universiade, other competitions in winter sports of high world and European levels. Such cooperation could give a very effective result for the development of the border regions of both countries;

- implementation of objective prerequisites for the formation of a large-scale international transport and logistics complex with the development of a system of logistics warehouses in the territory of Slovakia, an industrial park in the Ukrainian territory and a new bridge crossing the Tisza river;

- construction of railway crossing in the area of stations Pavlovo (Ukraine) – Matyovce (SR), where there is a wide track between stations Uzhgorod – Kosice, in the immediate vicinity of which from the Ukrainian side the territory of perspective development of electronic and auto agrarian industry is started and reconstruction of export lines of high voltage power grids is carried out.

Cluster model economic development in industrialized and European countries with transition economies is directly linked to logistics, an industry of science that studies the theory of active management of material, information, and financial flows in economically adapted synergistic systems.

Romania, the southwestern neighbor of Ukraine, as well as other countries with transition economies, has faced serious problems of entrepreneurship development in the country, leaving the country's economic

³³ Україна в системі європейської інтеграції [текст]: Монографія. Навч. посібник / М. Палінчак, В. Приходько, В. Химинець та ін. – Ужгород: ТОВ «РІК-У», 2016. – С. 240, 241.

situation for 10 years (1989-1999) quite complicated and fragile. During this period, seven different governments have changed in Romania. Each change of the Cabinet caused not only changes at its level, but also led to the shuffling and rebuilding of the entire leading level in the ministries and state agencies. All this caused considerable delays and even the cancellation of individual National Programs. The new government, elected in 2000, drew attention to the development of the SME sector. At that time, for the first time, not only in Romania but also in Europe, the Ministry of Small and Medium-Sized Enterprises was established, and in July 2000 the National Agency for Regional Development (NARD) was set up to develop a variety of local initiatives. However, significant changes have taken place at the new NARD agency, which has been actively involved in the process of privatization and restructuring and overcoming bureaucratic barriers on the path of foreign direct investment. In particular, at the end of 2001, more than 100 BAC (Business Activity Centers) were established across the country, providing a wide range of services, at the initiative of the NARD. BAC provide business plans, entrepreneurship training, grants and loans to SMEs. In accordance with the objectives set, a National Regional Development Plan was established and approved in Romania, which has the following components³⁴:

- clarification of property rights;
- introducing corrections to ensure consistency of economic legislation;
- establishing the necessary institutions, ensuring financial discipline;
- a stable tax system and elimination of bureaucratic obstacles;
- control of the budget deficit;
- Strengthening of operating expenses and increase of efficiency of budgetary expenses;
- fighting inflation;
- support for products made with the “made in Romania” brand to succeed in world markets;
- Increasing competitiveness in various industries;
- agricultural development;
- infrastructure development and environmental protection;
- more efficient use of tourism potential;
- consolidation of the SME sector;
- maximum use of manpower;
- territorial planning and regional development.

³⁴ Соколенко С.І. Зазначена праця. – С. 338-340.

CONCLUSIONS

Thus, according to Sokolenko in his monograph “Clusters in the Global Economy”, the National Regional Development Plan reflected the country's main strategic priorities:

- legislative and institutional harmonization with EU regulatory standards;
- practical tools for structural regulation, enhancement of regional and national competitiveness and many other relevant areas for the regions;
- raising the economy of less developed regions to the level of the most developed western regions of Romania. The Ministry of Development and Forecasting of Romania is responsible for controlling and monitoring the National Regional Development Plan;
- in order to accelerate the development, the Romanian side, together with neighboring countries, Hungary and Bulgaria, provides for the implementation of joint border cooperation initiatives. There are also similar types of cooperation between Romanian and Ukrainian border areas in the Tisza river basin.

The clustering of the Romanian economy is slow because of the significant difficulties in the formation and development of SMEs, as former governments have traditionally focused on the problems of “white elephants” – large unprofitable state-owned enterprises. Of great importance in the development of network structures was the project “Alliance for entrepreneurial development in rural zones”, carried out in Alba Julia, in mountain Transylvania, which was joined by the previously established Italian cluster in Calabria. Italian-Romanian cooperation at the regional level demonstrates the perspective and effectiveness of sharing experience and transferring knowledge on business development and overcoming the crisis in the most depressed areas (in 2001, the Ukrainian Podillya, Hrytsiv used this experience, creating the first ecological cluster in Ukraine)³⁵. Such experience is valuable for the regions of Ukraine, in particular for the regions of the Ukrainian Carpathians, as well as the Transcarpathian region.

SUMMARY

The article analyzes the concept of “cluster”. The role of clusters in economic development. Features of clustering of the world economy. Features of cluster development in the period of the world economic crisis. Experience of clustering the economies of different countries. And the possibility of its use for the economy of Ukraine. The article examines cluster statistics for individual EU countries. Gross Domestic Product Growth (Decrease) Rate for

³⁵ Соколенко С.І. Зазначена праця. – С. 344.

the analyzed group of countries from 2008 to 2017. Cluster development achievements in Poland, Slovakia and Romania.

REFERENCES

1. Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 181.
3. Зазначена праця. – С. 184, 185.
4. Чужиков В.І. Кластерна політика Європейського Союзу / В.І. Чужиков, С.Д. Лук'яненко // Економіка України. – 2013. – № 2 (615). – С. 81-91.
5. Чужиков В.І. Кластерна політика Європейського Союзу / В.І. Чужиков, С.Д. Лук'яненко // Економіка України. – 2013. – № 2 (615). – С. 83; Портер М. Международная конкуренция / М Портер. – М.: Международные отношения, 1993. – 896 с.
6. Чужиков В.І. Кластерна політика Європейського Союзу / В.І. Чужиков, С.Д. Лук'яненко // Економіка України. – 2013. – № 2 (615). – С. 86.
7. Марчук О.І. Кластерная стратегия инновационного развития экономик Беларуси и Украины / О.И. Марчук, Т.А. Яшева, Н.Т. Рудь / Проблеми інноваційного розвитку економіки України: Збірник наукових праць з актуальних проблем економічних наук // Наукова організація «Перспектива». У 2-х частинах. – Дніпропетровськ: Видавничий дім «Гельветика», 2014. – Ч.2. – 312 с.
8. Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 207, 209.
9. Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 470-472.
10. WEF Knowhenge Nawigator-Germany, 2003 // <http://www.weforum.org.de>
11. Гамор Федір. Всесвітнє визнання букових пралісів Карпат: історія та менеджмент / Матеріали з нагоди десятиріччя утворення об'єкта Всесвітньої спадщини ЮНЕСКО «Букові праліси Карпат та давні букові ліси Німеччини». – м. Ужгород, Вид-во «ФОП «Сабов А.М.». – 2017. – 248 с.
12. Гамор Федір. Всесвітнє визнання букових пралісів Карпат: історія та менеджмент / Матеріали з нагоди десятиріччя утворення об'єкта Всесвітньої спадщини ЮНЕСКО «Букові праліси Карпат та давні букові ліси Німеччини». – м. Ужгород, Вид-во «ФОП «Сабов А.М.». – 2017. – С. 87.
13. Гамор Федір. Зазначена праця. – С. 105.
14. Гамор Федір. Зазначена праця. – С. 107.

15. Гамор Федір. Зазначена праця. – С. 131-134.
16. Гамор Федір. Зазначена праця. – С. 131-132.
17. Екологія і закон. Екологічне законодавство України. У двох книгах. Книга 2; Відп. ред. акад. УЕАН В. І. Андрейцев. – К. : Юрінком Інтер. – 1997. – 574 с.
18. Гамор Федір. Зазначена праця. – С. 38.
19. Економічна енциклопедія: [у 3 т.]. – Київ: Видавничий центр «Академія», 2002. / Голова редакційної ради: Гаврилишин Б. Д. (голова) [та ін.]. Т. 1 / [відп. редактор Мочерний С. В. та ін.]. – 2002. – 864 с.
20. Екологічна енциклопедія: У 3 т. / Головн. ред. А. В. Толстоухов та ін. – К.: ТОВ «Центр екологічної освіти та інформації», 2007. – Т. 2: Є-Н. – 416 с.
21. Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 2.
22. Гамор Федір. Всесвітнє визнання букових пралісів Карпат: історія та менеджмент / Матеріали з нагоди десятиріччя утворення об'єкта Всесвітньої спадщини ЮНЕСКО «Букові праліси Карпат та давні букові ліси Німеччини». – м. Ужгород, Вид-во «ФОП «Сабов А.М.». – 2017. – С. 87.
23. Гамор Федір. Зазначена праця. – С. 41.
24. Гамор Федір. Зазначена праця. – С. 72, 73.
25. Гамор Федір. Зазначена праця. – С. 78.
26. Розміщення продуктивних сил: Підручник / В.В. Ковалевський, О.Л. Михалик, В.Ф. Семенова. – 3-тє вид., випр. і доп. – К.: ТОВ «Знання», КОО, 2001. – 353 с. – (Вища освіта ХХІ ст.).
27. Статистичний щорічник України за 2012 рік / Державна служба статистики України. – Київ: ТОВ «Август-Трейд». – 2013. – С. 535, 536. Статистичний щорічник України за 2017 рік / Державна служба статистики України. – Київ: Державне підприємство «Інформаційно-аналітичне агентство». – 2018. – С. 525, 526.
28. Соколенко С.І. Кластери в глобальній економіці / С.І. Соколенко. – К.: Логос, 2004. – С. 315.
29. Соколенко С.І. Зазначена праця. – С. 318, 319.
30. Соколенко С.І. Зазначена праця. – С. 322.
31. Соколенко С.І. Зазначена праця. – С. 318-319.
32. Соколенко С.І. Зазначена праця. – С. 302, 304, 308.
33. Україна в системі європейської інтеграції [текст]: Монографія. Навч. посібник / М. Палінчак, В. Приходько, В. Химинець та ін. – Ужгород: ТОВ «РІК-У», 2016. – 344 с.

34. Україна в системі європейської інтеграції [текст]: Монографія. Навч. посібник / М. Палінчак, В. Приходько, В. Химинець та ін. – Ужгород: ТОВ «РІК-У», 2016. – С. 240, 241.
35. Соколенко С.І. Зазначена праця. – С. 338-340.
36. Соколенко С.І. Зазначена праця. – С. 344.

Information about the author:

Palinchak M. M.,

Doctor of Political Science, Professor,
Dean of the Faculty of International Economic Relations,
Uzhhorod National University
14, Universytetska str, Uzhhorod, 88000, Ukraine