

CHALLENGES AND THREATS OF UKRAINIAN SPATIAL DEVELOPMENT ON THE WAY TO EUROPEAN INTEGRATION

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Abstract. Ukraine is going through a complex process of transformational changes. It occurs under the Russian aggression in Donbas and Crimea occupation and with simultaneous aggravation in the global geopolitical situation, emergence of the new confrontation lines and conflicts. Due to some complex factors, Ukraine has overcome a significant number of challenges, including the one in the area of spatial development. The today's consequences include among others significant polarization of regional development as well as urgent problems of specific areas development (remote regions, coastal zones and mountain area). The paper's objective is to analyze the framework conditions and key features of spatial integration of Ukraine as a basis for Sustainable Spatial Development Strategy implementation.

Key words: Ukraine, European integration, sustainable spatial development, regional disparities, challenges and threats, Strategy.

Introduction

When assessing the negative effects of interaction between the society and nature which at the global and regional levels manifested in the loss of biosphere integrity, land-use change, biochemical cycles and planetary climate change, the world community – after lengthy discussions – adopted the basic development paradigm for the XXI century – the paradigm of sustainable (balanced) development. Its underlying principles are based on the views of balance and integration in economic, social, environmental and humanitarian development. In all countries of the European Union (EU) those principles of sustainable development constitute the foundation of regional development strategies and national action plans for their implementation. Ukraine is also on the way to implement this basic paradigm of development.

Modern Ukrainian society critically evaluated the previous course of development and, in order to provide successful integration in today's globalized world, turned to the European vector chosen by the pre-Ukrainian state since ancient times. This happened as a result of understanding the values gap between the European space, formed by evolution, and artificially formed authoritarian Soviet

space, based on dictatorship and russification. Its relics are still evident in Ukraine and thrive in many former Soviet republics.

Methods

In our research, we aimed at studying several aspects which directly or indirectly determine the opportunities and framework conditions for the European integration of Ukraine, pose risks and threats to this process in context of spatial development.

According to the CEMAT glossary (CEMAT 2007) “Spatial development refers to the evolution of territories in all their dimensions (economic, social, environmental, physical)” and spatial development policy “means a policy promoting the development of space in accordance with general principles”. In context of our research we may define spatial development as transformation of the space, which is appropriate and planned, on the basis of balanced consideration of the public interest and landscapes’ capacity.

In particular, we had to outline the baseline positions, from which Ukraine is attempting to implement the European vector of integration. For that purpose we analyzed the economic, social, environmental and institutional blocks of indicators which determine the current level of the country’s development in this area and allow for comparing it with other countries. The indicators were selected on the basis of international and European experience in the field of sustainable development, spatial development as well as according to the national policies and practices.

The major European projects considered in the process of indicators selection included KITCASP (Key indicators for territorial cohesion and spatial policy, program ESPON) and INTERCO (Indicators of territorial cohesion).

The goal of KITCASP (ESPON 2013) was closely connected with identification of the most suitable core set of key indicators of significant practical use to the policy-makers and practitioners at the national and sub-national levels in preparation of territorial development strategies. The approach took the two types of indicators (“process indicators” and “results indicators”) into account. It also provided identification of key priorities, goals, driving forces of policy, spatial planning topics, stake-holders’ opinions, suggestions for evaluation and verification of the selected indicators.

The INTERCO project (ESPON 2013) was carried out under the basic provisions of the Territorial Agenda of the EU-2020, taking the challenges and priorities identified in the document into account. The indicators (initially more than 600) were divided by six topics: strong local economies ensuring global competitiveness; innovative territories; fair access to services, market and jobs; inclusion and quality of life; attractive regions of high ecological values and strong territorial capital; integrated polycentric territorial development.

Analysis of different sets of sustainable development indicators became another important stage of the research. It included sets of UN (UN 2007) and EU Commission (Eurostat) as well as certain national approaches (Burkinsky & Rudenko 2012; Zgurovsky 2009).

The range of general criteria for selecting indicators was finally developed as follows:

- thematic balance (according to the “Agenda XXI” principles);
- consideration of global trends and challenges;
- indicators availability at different levels (at least key indicators);
- combination of primary and aggregated indicators;
- representativeness;

- limited number of key indicators which may be expanded for different themes;
- flexibility;
- suitability for the analysis of phenomena and processes with different dynamics;
- political integration (accordingly to priorities and strategies of national policy);
- balance of international approaches and national requirements.

We analyzed the historical events which have largely caused the current problems in the Ukrainian spatial development.

Also the SWOT and GAP analyses have been performed in context of framework conditions of the modern country's spatial development. In the course of works, a significant number of legal instruments determining the modern economic, environmental and social aspects of the Ukraine spatial development has been analyzed along with certain international agreements and conventions which Ukraine has signed.

European vector of Ukraine's integration and global challenges

Development of cooperation with the EU and Asian associations does not constitute a waiver of independent foreign policy. Currently, Ukraine suffers only from its specific geopolitical position, since the interests of the world powers and political associations are focused here. As soon as the peace is concluded, the country should take advantage of both eastern and western vectors of cooperation in the Baltic-Black Sea region. "Civilization rift" between the Western and Eastern Christianity becomes narrower due to accelerated integration in economic, social, environmental and humanitarian (including religious) areas.

Ukraine's accession into the EU and adoption of the globalized world advantages (innovation, technology, investments, education, etc.) is strategically important. However, it is clear that the weakening of Russia's influence will continue to be accompanied by threats of economic, technological and informational nature and some manipulations. Thus, the first priority is formation of nationally oriented political and administrative elite aimed at state focused path of development, based on close cooperation between science, business and communities. Ukraine strives for optimising its spatial development parameters at the time in which significant number of global problems in the world has escalated. The struggle between different centers of power, cultural and civilizational order conflicts has intensified in the world. That's why it is difficult for Ukraine to get the status of the subject rather than the object in the international relations.

It is clear that for Ukraine, as for other countries in the world, three major global challenges such as civilizational and religious clashes; limited development resources; critical environmental state and global climate change, remain urgent today.

Historical reasons for current problems of spatial development

Unfortunately, according to conclusions based on the global rating analysis, Ukraine can be allocated only to the semi-peripheral economic system, moreover in recent years there is even a downward trend in most international indices observed. A significant number of problems exist in the area of spatial development. Some of them date back to the period when Ukraine was a part of the USSR, whereas the others are of a modern genesis. It is worth to note that disparities in the

Ukraine's regional development originated when it was a part of the USSR – formally as a republic – and in reality – as one of the regions completely dependent on the center. During this period, the use of natural resource and integral development potentials of the territory were carried out in the interests of Moscow. Accordingly, in the process of spatial development planning, Ukraine and its regions were seen as southwestern periphery of the USSR, and its territory – as a raw material source with intensive industry and extensive agriculture. During the entire period of belonging to the USSR, even immediately after the Second World War, investments per capita in Ukraine from the Soviet Union budget were much lower than the countrywide average and could not offset the integrated area expenses. At becoming independent, Ukraine had to build its statehood without sufficient personnel managers able to make and implement their own decisions. The country's development potential was largely destroyed, natural resources – exhausted and the main production facilities – significantly depreciated.

The consequences are still felt today – in the last 25 years Ukraine has the world's lowest rates of GDP growth (Fig. 1). Almost a quarter of the country population lives below the poverty line. The major role in such condition can be attributed to failures in public policy, since independence, corruption, political instability and inability of the national elites to think and act patriotically.

During the 20th century, the territory of today's Ukraine underwent the pass from the regions richest in natural resources (powerful by European standards oil, natural gas and coal deposits in the beginning of the 20th century) to the country unable to satisfy its own demand for resources at the end of the same century. At the peak of its energy power at the end of the 1980s and in the beginning of the 1990s, the territory smaller than 0.5% of the total world dry land produced around 4% of the global electric power. In 1976, Ukraine mined 218 million tons of coal, in 1972 – 14.4 million tons of oil, in 1975 – 68.7 billion cubic meters of natural gas. In 2011, Ukraine mined only around 82 million tons of coal, 2.4 million tons of oil and 20.1 billion cubic meters of natural gas (Lisovsky 2009).

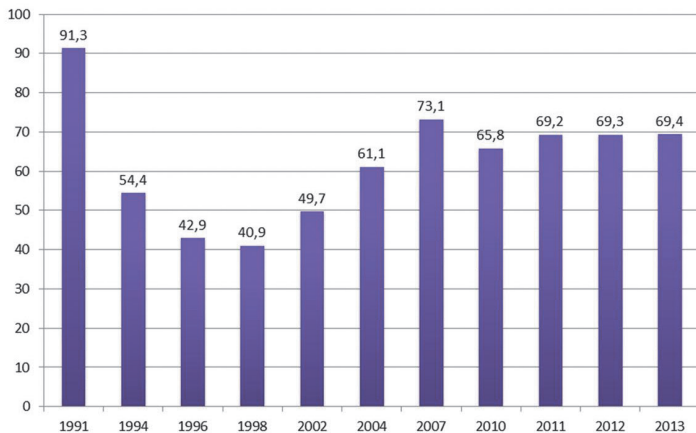


Figure 1. Ukraine: GDP growth, 1991-2013, 1990 = 100%

Enormous scale of natural resources exploitation, did not however contribute to the country's prosperity. On the contrary, the signs of stagnation could be felt stronger and stronger in Ukraine. All this occurred simultaneously with the worsening of demographic situation. As a result, a sort of

a stalemate situation formed in the country as the extremely ineffective natural resources-intensive economy led to environment deterioration, which in turn inhibited economic and social development.

There is also a number of serious demographic problems in Ukraine. The consequences of the WWII and of the 1930s artificially created Golodomor are still present in Ukraine. Significant share of the Soviet era migrants moved in from the outside of Ukraine, especially to the regions which the most suffered from Golodomor. As a result, there were some problems with identification as the citizens of the independent Ukraine for the certain part of the population.

Modern features of economic, social and environmental development of Ukraine

What does Ukraine represent from the point of view of condition and potential of its development evaluation in the process of geographical research? What are the today's achievements and flaws?

The national strategy for regional development for the period until 2020 (CMU 2014), defines three stages of development processes since 1991:

- stage of economic transition (1991-1999) – crisis of the socialist planned economy;
- stage of economic recovery (2000-2007) – formation of free economic environment;
- stage of the global financial and economic crisis (2008-2012) – a period of significant decline of the foreign economic activity and regional economies.

However, none of these periods was a time of effective and radical reforms. Hence, it is not surprising that Ukraine ranks far below the top positions in the global economic rankings, often the last among European countries. Unfortunately in most of them even the post-Soviet countries such as Kazakhstan, Russia or Belarus are ahead of Ukraine. However, for example in the rating of investment attractiveness, the situation similar to Ukrainian can be seen for Croatia, Macedonia, Serbia, Bosnia and Montenegro. It should also be noted that “economic activity”, calculated based on GDP and unemployment indicators is among the most problematic components of this rating for Ukraine. The remaining positions are much closer to the European “cluster”. The state of institutional framework development, accounted for in the most evaluations, is the biggest “burden” for the national economy, primarily because of lack of transparency and corruption in most procedures. The worst, as seen in the chart ... is the condition of economic freedom in Ukraine, which in theory should have been improved after the “power reload”. In practice, there was a general deterioration, and some positive changes are seen only in one segment – freedom from corruption.

Excessively open, overly dependent, “underinvested” – these are the main characteristics of the national economy at the macro level. In 2014, in terms of GDP (according to the World Bank), Ukraine ranked at 56th position behind such countries as Egypt, Iraq, Peru and Vietnam. In terms of GDP per capita, situation is even worse – Ukraine was 113th in 2014. And this is not a direct result of military actions. GDP at current prices actually decreased significantly compared with 2013, however in terms of GDP per capita Ukraine reached 114th position in 2013. For comparison – in 2014, Germany ranked 15th in terms of GDP per capita. The nearest neighbor countries: Poland – 47, Belarus – 68, Hungary – 49, Czech Republic – 35, Slovakia – 38, Romania – 64 (Tab. 1¹.)

Fairly high share of services trade and employment in this area is largely caused by influence of the shadow economy. The share of expenditure on research and development is extremely low.

¹ Tables 1-5 were calculated accordingly to World Development Indicators data <http://data.worldbank.org/indicator/all>

Ukraine is not the only country where such expenditure is less than one percent of GDP, even among the EU countries (Bulgaria, Lithuania, Latvia, Poland, Slovakia and Croatia). However the absolute indicator determined by GDP and the efficient use of funds must also be considered here. Foreign investments also remain critically low with their growth limited by high risks of conducting business in Ukraine and insufficient development of the market environment. In absolute terms, FDI into Ukraine is 11 times lower than FDI in Germany, in Poland – 2 times. FDI per territorial unit – respectively 18 and 6 times.

Table 1. Ukraine: key development indicators – economy

Indicators	2000	2005	2010	2013/2014	Comparison 2013/2014	
					Germany	Poland
GPD per capita (current US\$)	635,7	1828,7	2974,0	4029,7/3082,5	47627,4	14422,8
GPD per km ² (current US\$)	53962,4	148694,2	235481,7	227516,9	11053411,0	1789574,0
Imports dependency, % of GDP	57,4	50,6	53,6	52,1/-	39,8	44,2
Exports dependency, % of GDP	62,4	51,5	50,7	43,0/-	45,6	46,1
Foreign direct investment per km ² (current US\$)	6688,9	29705,5	100091,5	132429,4/-	2443079,7	823058,6
High-technology exports, % of exports	5,2	3,7	4,3	5,9	16,1	7,7
Employment in services, % of total employment	13,3	56,4	62,1	62,1/-	70,2	57,0
Research and development expenditure, % of GDP	1,0	1,2	0,8	0,7	2,9	0,8

All economic difficulties are of course reflected in the social sphere. In almost all regions of the country mortality exceeds the birth rate. In the age structure, share of the older population is significant. This creates the pension problem. In many regions, especially in the villages, population decreases rapidly. Ukraine, in Soviet times and in recent history, had its reasons to be proud of many components of personal development. High-quality school education, high proportion of people with higher education, skilled labour force and some individual features of national mentality – hard work, creativity, ability to acquire new knowledge and skills, notable role of women in society really suggest the strengths and benefits which were reflected in the ranking in terms of human capital (31. place). Also the Gini index should be considered positive (the range 24.6 – 28.2 in the past 5 years). This points at more or less even income distribution (although practically without reflecting its shadow part). Both in Germany and in Poland, the Gini index is higher (respectively – 30.6 and 32.78). Unfortunately, the situation in the other aspects is much worse and projected at low enough (for the European countries) life expectancy – 68-69 years (Tab. 2).

Table 2. Ukraine: key development indicators – society

Indicators	2000	2005	2010	2013/2014	Comparison 2013/2014	
					Germany	Poland
Population density (person/sq km)	81,5	78,0	76,0	75,3/75,2	226,6	121,5
Urban population (mln. people)	33,0	31,9	31,5	31,5/31,5	60,7	23,0
Household final consumption expenditure, % of GDP	54,4	57,9	62,9	73,0/71,4	55,9	60,9
Life expectancy at birth	68,9	68,0	70,3	70,8/71,2	81,0	76,9
Unemployment with tertiary education (%)	44,0	33,3	35,8	39,7/-	11,0	12,1
Age dependency (%)	50,9	43,9	42,2	41,9/42,0	52,1	42,6
Government expenditure on education (% of GNP)	3,9	5,6	6,04	6,6/-	4,3	4,6
Government expenditure on health (% of GDP)	2,9	3,8	4,4	4,2/-	8,7	4,6

Growth of final households' consumption expenditure is not typical for the developed countries, which may indirectly indicate some important issues, including the concealment of income, rising prices, high loan interest rates, etc.

As for the labor market, the unemployment rate among people with higher education is too high, which indicates on a number of problems in education and economy as a whole, for instance inefficient planning of professional trainings, „overproduction” in some popular areas, which often occurs at low standards and the state's inability to provide employment for certain sectors. Government spendings on education and healthcare as a percentage of GDP (GNP) is quite high compared to the other countries, but given in absolute values, they do not meet the adequate level of security in these areas.

Environment and sustainable development issues should have been a priority of the Ukraine state policy for a long time, but, unfortunately, rarely go beyond formal declarations and legislative framework. As a result, Ukraine has in this sphere one of the worst positions in Europe. For example, in theecological efficiency index rankings Ukraine wasn't even in the top 50 by any of the components.

Let us take a closer look at the key indicators that characterize the current state of the environment in Ukraine (Tab. 3).

It is well known that reduction in the greenhouse gases emission results from industrial production decline in Ukraine after the 1990s. Measures of the new technologies and alternative energy sources development are not sufficiently effective. For instance, share of energy from renewable sources is four times lower than in Germany and two times lower than in Poland. The same applies to energy produced from biomass – very promising, given the rate of agricultural sector development in Ukraine – sources which are almost not used. The problem of low energy use efficiency both in businesses and in the public sector is well known and is likely to be settled simultaneously with the increase of tariffs and increasing the availability of appropriate credits.

Table 3. Ukraine: key development indicators – environment

Indicators	2000	2005	2010	2013/2014	Comparison 2013/2014	
					Germany	Poland
CO ₂ emissions, t per capita	6,52	7,09	6,64	6,26	8,92	8,24
Renewable energy output, %	6,59	6,67	7,10	5,66	22,93	10,44
Protected areas, % of total area ²	4,44	3,60	4,49	4,49	49,04	34,81
Improved water source, % of population with access	97,60	97,20	96,70	96,30	100,0	98,3
Energy use (kg of oil equivalent per capita)	2720,72	3033,28	2886,99	2690,32	3885,98	2570,85
Forest area, % of total area	16,41	16,53	16,75	16,84	31,78	30,67

In the last ten years, Ukraine has made some steps to preserve biodiversity and areas of natural reserve fund. Dozens of national parks and transboundary biosphere reserves have been created. Yet the proportion of such areas is very low across the state and their establishment and operation is being accompanied by numerous conflicts and violations. The percentage of forests still remains lower than in many European countries.

Today the problem of reforming the institutional framework and implementation of the new policy standards is perhaps the most widely discussed topic in the Ukrainian society. Indeed, it is the institutional component, which often hinders if not makes the economic growth impossible (for example through development of small business), innovations in the social sphere, etc) (Tab. 4).

Table 4. Ukraine: key development indicators – policy

Indicators	2000	2005	2010	2013/2014	Comparison 2013/2014	
					Germany	Poland
Bribery incidence, % of firms, experiencing at least one bribe payment request	–	–	38,5	50,4/–	0,0	1,9
Times, required to start business, days	–	34	27	21	14,5	30
Proportion of seats held by woman in national parliament, %	7,8	5,3	8,0	9,4/11,7	36,5	23,7
Time to prepare and pay taxes, hours	–	2085	657	390/350	218	286

² There are obviously different approaches.

According to the Corruption Perception Index, Ukraine achieved almost the worst result among all countries in the world and the worst – among the European countries (142. place from among 174 countries in 2014)³

Indicators of information technologies development in Ukraine remain low comparing with developed countries. This translates into low information availability for the population, especially in the regional centers and areas remote from the capital as well as limitations for e-governance development. It should be noted however that Ukraine demonstrates more or less steady positive trend in the logistics and infrastructure development.

The main and actually the only positive sign on transport infrastructure, except railroad freight turnover index, is that all modes of transport are represented in Ukraine – auto, rail, water, aviation and pipeline (Tab. 5). Quantitative indicators characterizing the development and technical condition of the equipment and rolling stock of the systems themselves do not meet even a single EU standard. For instance, with respect to density of motorways, the gap is four – five times on average (in Germany – six times, Poland – three times), railway – about two times (in Germany – 2.5 times, Poland – about two times). Quality of transport infrastructure meets the international standards only in some exceptional cases (some airports, ports and roads). Development of highway network is extremely slow, despite the paved (on the map) pan-European transport corridors included in all sectoral and territorial plans. Since the beginning of the 1990s, the intensity of waterways in Ukraine decreased hundreds of times. It is also obvious that the fierce competition from some global “giants” such as Lufthansa Group, American Airlines, Delta Air Lines, Air France-KLM and others will hinder development of air transport.

Table 5. Ukraine: key development indicators – networks and communication

Indicators	2000	2005	2010	2013/2014	Comparison 2013/2014	
					Germany	Poland
Road km of road per 1000 sq. km of land area)	271	273	281	281	1805	860
Internet users (per 100 people)	-	0,3	6,4	8,4	25,8	23,8
Mobile cellular subscriptions (per 100 people)	1,7	63,7	117,1	144,1	3120,4	156,5
Railways, passengers carried (million passenger-km)	51,8	52,7	50,2	35,9	93,8	62,7
Railways, goods transported (billion ton-km)	172,8	224,0	218,1	210,2	112,6	50,2
Roads, passengers carried (million passenger-km)	28,8	52,5	52	42,6	971,0	247,9
Roads, goods transported (billion ton-km)	19,3	35,3	53,9	56,0	468,9	262,9
Air transport, passengers carried (thousands)	950,6	2512,9	3956,1	4490,0	107587,5	5186,8

³ <http://www.transparency.org/>

Significant lag in modern information technology is also noticeable. For instance, in terms of high quality wire internet provision, Ukraine has four times worse results than Germany, Poland – three times (similar, though the smaller lag applies to population-any type of Internet users). Provision of mobile communication is at high level (higher than in Germany). As for this indicator, a period of rapid growth in the 2004-2006 could be noticed, which accounted for reduction and rates “democratization” among the domestic operators (primarily – waiving charges for incoming calls).

In context of response to the challenges of both globalization and Russian aggression, the information policy and resources become especially solid arguments. By the number of subscription and free press index, Ukraine is comparable with Poland (2517 and 2509 respectively), the average circulation however is somewhat lower – 65.1 against 76.6. In the Group of Seven countries, G7, these figures are much higher. For example, Germany has 14242 publications and – circulation of 245.8.

Tentatively, the ecological network («green infrastructure») can also be included into the block of networks, which is usually considered at spatial planning and includes elements (aqueducts or passages for animals) which are organically incorporated in the road infrastructure. In the European countries, design and creation of ecological networks is carried out within the NATURA-2000 framework. Today, its percentage varies in the range of 20-24% (in Germany – 22.6, in Poland – 21.8%). In Ukraine, under the National Program of ecological network development⁴, its area is declared at 37.81% of the country’s territory with the forecast for 2015 of 41.68%. In practice, the process of development and approval of regional ecological networks is progressing slowly and speaking about the exact figures is difficult even in the mid-term prospective.

Analysis of spatial development preconditions of Ukraine

Current selected strong points in the area of spatial development include: favorable geographic location; fertile soils; favorable climatic conditions for population living and production organization; availability of natural areas which determine the specificity of different crops growing; explored reserves of natural resources, such as hydrocarbons, raw materials for nuclear energy and precision engineering; high level of population education and development of science; relatively developed transportation, technical and social infrastructure; availability of landscape and biological diversity, etc.

The weaknesses posing certain challenges and threats to Ukraine and cause certain public concern include: population fragmentation and social inequality; low wages and lack of jobs, which cause the increasing social tensions (and stimulates “social diseases” – alcoholism, drug addiction and crime); negative trend in demography, population aging and migration outside the country; inadequate expenses on science, which is a leading factor in the formation of a new state technological structure; high wear of main fixed assets, engineering and transport infrastructure, outdated technological solutions and processes in all types of economic activity; inefficient industrial structure of industrial production; high energy and water consuming economy, its import dependence; low GDP per capita; high levels of corruption; breach of natural ecological properties of the environmental components, particularly poor quality of drinking water and high levels of air pollution in urban areas, high level of plowed land and low level of natural reserves; inactivity of managerial structures regarding integration of the Ukrainian economy into the European Economic Area.

⁴ <http://zakon5.rada.gov.ua/laws/show/1989-14>

The threats to the Ukrainian spatial development include the problem of Chernobyl disaster consequences, which stands out above all others (withdrawal of a large area from economic sphere, radioactive soil pollution, population health deterioration as a result of exposure to radiation, idling of Chernobyl NPP, etc.). As for geopolitics, the consequences of the Russian aggression, Crimea annexation, Donbass hostilities and rise in terrorist activities remain unpredictable. Significant economic growth slowdown caused by such factors as financial-economic and energy dependence; violation of parity between the exports and imports; presence of shadow economy; large number of objects which are the potential sources of emergencies; low financial support level of scientific activities, disabling support to the areas that correspond to the sixth technological structure (biotechnology, new materials and nanotechnology, electronics, space research, energy technology, etc.). It should be noted that unfortunately critical state of the country's economy is largely caused by uncertainty of its development objectives, ill-conceived actions of high rank managers whose appointments were based not on professionalism but are usually politically motivated, which in conjunction led to inefficient administration and rising corruption. Finally we should note the crisis in social and individual morale.

Analysis of strengths and weaknesses of the Ukraine's economy and key threats it will face does not give a clear definition of future development scenarios. As of the beginning of 2016, we can state violations of several international agreements addressing the stability and certainty of the European states borders. Ukraine found itself the object of aggression by the "brotherly nation" losing part of the territory, spending significant resources to support the rest of the border and conducting anti-terrorist operations. As a result of social standards deterioration, no transparency in governance including international loan funds and programs, unfulfilled expectations of Revolution of Dignity, conflict potential accumulates in society. Negative effects of its implementation are clear both for Ukraine and for the developed world, advisory and financial support of which aims to reduce the risk of a new crisis.

The state of the Ukrainian economy significantly affected the development of spatial disparities (Fig. 2, 3). Since 1991, the degree of social and economic polarization only increased. The Theil index (GDP, population) increased from 0.06 in 2000 to 0.15 in 2014 as well as regional disparities in trade, investments, innovation and social security. Kyiv as a capital became the main center of human, financial and economic resources. It is followed by Dnipropetrovsky, Kharkivky, Odessky and Lvivsky regions after a large gap. Moreover, several western regions – Chernivetsky, Ternopilsky, Zakarpatsky and Volynsky obtained a constant status of outsiders. False picture of "regions-breadwinners" and "dependent regions" captured the mind of many Ukrainians. However, the impact of wrong state regional policy and unfair budget redistribution (huge subsidies for the Eastern regions) remained underestimated. The measure of distortion was significant. For example, in 2014, the subsidies to Donetsk region (East) were about 5 billion UAH while to Chernivetsky region (West) – less than 1.5 million UAH (VR 2014). And there was even more hidden support to East, which included extra state investment to coal industry, infrastructure etc. The feeling of illusive economic strength and state policy weakness led the industrial East to very special position, which may be recognized as an important reason of the Russian occupation in 2014. According to the last estimations, the area of occupied regions is about 44,000 sq km, with approximately 5 million people living there. This area is comparable to Denmark, Estonia, Switzerland, Bhutan and the Netherlands. Unfortunately, reliable assessment of socio-economic costs and restoration measures is currently impossible. At the same time the potential problems are rising along the western Ukrainian borders, where the abandoned local population is looking for illegal cross-border business and migration opportunities.

Let us also look at development specifics of the Ukrainian cities, which should serve as the spatial frame centers. The only city that can today claim to be global is Kyiv. By the majority of conclusions based on the main features of globalism analysis, even the capital of Ukraine still cannot be called a global city. At the same time, Kyiv is already one of the most important centers of European scale significance. Potentially, Kharkov, Odessa, Dnipropetrovsk, Zaporizhzhia and Lviv can be attributed to this category. The remaining regional centers serve mainly the internal functions, often yielding by population and some socioeconomic development indicators even to a minor regional center.

Table 6. Main cities – centers of Ukrainian spatial development

Category	Subcategory	Cities-centers
Macro-Regional center (in prospect – global), with high potential of economic and population growth	–	Kyiv
Internal center (in prospect – global), with population above 1000000 people and population reduction that does not exceed the average Ukrainian indicator ⁵	–	Odessa, Kharkiv
Internal center (in prospect – macro-regional) with high potential of economic growth and population of 500000 – 1000000 people	with population reduction that exceeds the average Ukrainian indicator, industrial oriented	Dnipropetrovsk, <i>Donetsk</i> ⁶ , Zaporizhia
	with population reduction that does not exceed the average Ukrainian indicator with prospects of service economy development	Lviv
Internal center (in prospect – with some global functions), with middle potential of socio-economic growth and population below 500000 people	with population reduction that exceeds the average Ukrainian indicator	Lugansk, Kherson, Poltava, Sumy
	with population reduction that does not exceed the average Ukrainian indicator	Mykolaiv, Vinnitsa, Cherkassy
	with population growth	Ivano-Frankivsk
Internal center (in prospect – with some global functions), with low potential of economic growth and population below 500000 people	with population reduction that exceeds the average Ukrainian indicator	Zhytomyr, Kirovograd, Ternopil
	with population reduction that does not exceed the average Ukrainian indicator	Chernigiv, Uzhgorod
	with population growth	Lutsk, Rivne, Khmelnytsky, Chernivtsi

The picture emerging in Ukraine does not look appealing. The development basis, in addition to the capital, constitute six other cities (current and former million cities), one of which is currently under occupation, and the other two losing population at a rather rapid rate of decline (Dnepropetrovsk-8.1%, Zaporizhzhia -6.3%). Dnipropetrovsk, Kharkiv and Zaporizhzhia probably have a potential

⁵ 3,8%

⁶ Before the Russian aggression on the East of Ukraine and occupation. The same information was considered for Lugansk.

for population increase due to immigrants from the occupied territories, however the quality of new human resources as well as their social integration costs remain uncertain. In this case, it is difficult not to agree with the ideas of more active establishment of additional metropolitan level centers or twin cities. According to one of them “the space between the cities requires another town of the same level” (Nudelman 2015) for the role of which Vinnitsa is being proposed. Such attempts, in our opinion, are also possible in Cherkassy. It should also be noted that the cities with the lowest category were firstly “underfunded” by the state during the long period of the “industrial East” development orientation. Revising such a policy can be the basis for their future recovery (Tab. 6).

Even more complex processes are taking place in the countryside, which accounts for over 80% of Ukraine. Inept management led to its decline. Over the past 25 years, rural areas lost more than 3 million inhabitants and are characterized, in most cases, by lack of budget-forming businesses, jobs, intensification of migrations and disappearance of a large number of rural settlements. From 1991 to 2013, 641 rural settlements disappeared in Ukraine. Some of them were however attached to larger in population size settlements, but 528 were completely abandoned.

Attention should be paid to ineffective policy on the remote regions and special areas. Problems of accessibility are essential in at least for 12 regional centers (total area of such regions covers approximately 47% of Ukrainian territory) and become even stronger at the local level.

According to the requirements of the Law “On status of mountain settlements in Ukraine” the mountain regions include 715 settlements in four regions (about 4% of Ukrainian territory with a population of about 1 million people), however the Carpathian region covers in total about 10% of the country’s area. Studies on social-economic development contain a range of evidences proving considerable economic backwardness of highlands comparing to the lowland regions. The only exclusion is the progress in forestry, however with income which is insufficient for local people well-being. Such factors increase the problem of unemployment and external labour migration (Kravtsov 2013).

Similar indicators may be identified within the coastal areas, as a part of Zaporizhsky, Donetsk, Mykolaivsky, Odessky and Khersonsky regions (over 6% of the territory and about 9% of the Ukrainian population). Economic backwardness in these areas is caused by the climate impact on agriculture, poor accessibility and low level of infrastructural development, especially by decline in sea transport. On the other hand, interregional differences in this group are much stronger. There are relatively highly developed areas (mostly within Odessky region), areas with the average rate of socio-economic growth (mostly within Zaporizhsky region) and depressive areas (Donetsky, Mykolaivsky, and Khersonsky regions). The most depressive patterns obviously occur in rural areas and among small towns. High value of coastal lands together with lack of up-to-date territorial plans also creates preconditions for impressive land-use conflicts and poor quality of investment environment.

Another unsolved problem is development of the areas contaminated after the Chernobyl disaster and of their inhabitants within 12 regions (total area of 54.7 km²). There are no specific planning activities, appropriate health care measures and investment projects. One of the promising initiatives for such type for this territory is a recently approved project of the Chernobyl Biosphere Reserve.

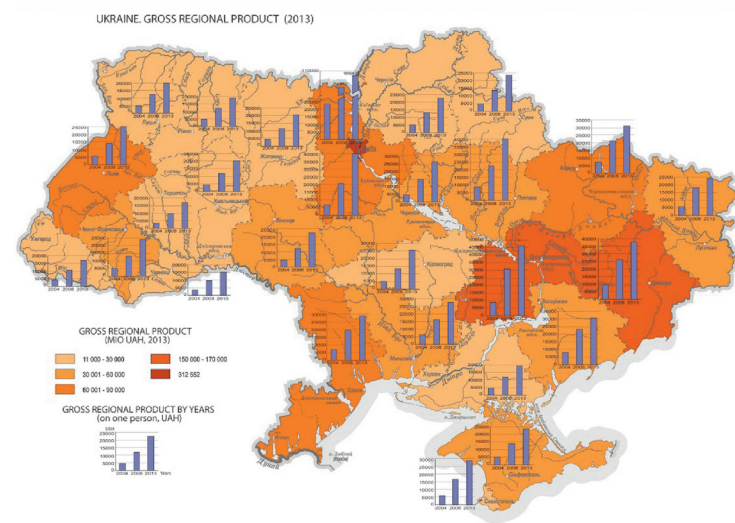


Figure 2. Ukraine: gross regional product (2013)

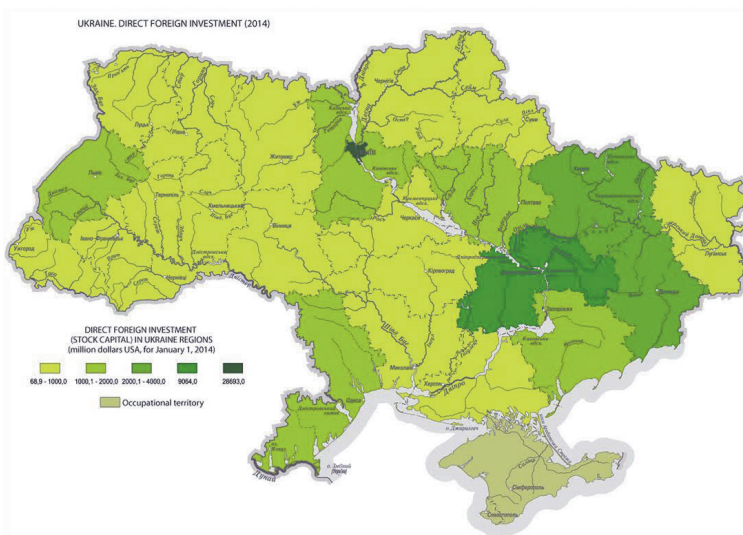


Figure 3. Ukraine: foreign direct investment (2014)

Unfortunately, all the above-mentioned types of territories have been facing lack of regional and sectoral policies and weaknesses of the territorial planning system. Moreover, Ukraine has been neglecting the strategic geopolitical importance of certain regions for a long time, especially the Black Sea region and considerable international initiatives there such as BLACKSEAFOR, TRACECA, INOGATE etc.

In general, the key features of spatial integration are shown on Figure 4. The main functional links are marked on the basis of the most intensive air, rail and road transport routes.



Figure 4. Ukraine: spatial integration

Science in solving the problems of spatial development

Throughout the whole period of independence, the scientists have given fair attention to the problems of the state development. In their numerous memoranda, reports and speeches, the scientists have been presenting thoroughly their developed scientific programs with specific proposals which had to be implemented in the country. "Ukraine has never had a lack in projects, concepts and programs of society transformation, but they all remained on paper" (Heyets 2010). In the one of Ukraine scientists report published by NAS, initiated and edited by V.M. Heyets, raises not only a number of thorny issues, but also offers the mechanisms to solve them through a series of reforms on political and state-legislative level, improvement of administrative-territorial structure, modernization of social space in Ukraine, state and development prospects of external sector of Ukraine economy, technological upgrading, modernization of public administration and many other specific mechanisms. Unfortunately, as in previous years, the scientists' proposals regarding implementation of different types of reforms remained neglected by the state authorities. Obviously, lack of reform has led to further consequences for socio-economic development, since most of the indicators forecasted for 2015 were not only achieved, but also tended to decrease.

The geographers' position on response to transformation in the country and implementation of sustainable (balanced) development cannot be considered as active in general. Under the new regional development policies and in context of decentralization processes, the issues being developed include not only regions and settlements in territorial planning, but also their development strategies. In these and other works, such issues as nature components status and their management prospects, human resources potential, economy structuring and other are being studied. However, due to objective and subjective reasons, the geographers are not engaged in those research processes. Meanwhile, the Institute of Geography of Ukraine NAS pays a significant

attention to implementation of the sustainable (balanced) development paradigm. In recent years, a number of books and manuals have been published (Lisovsky 2009; Burkinsky & Rudenko 2012; Lisovsky & Marushevsky 2012; Grechko & Lisovsky 2015; Rudenko 2014). Also, based on the principles of sustainable development, the research directed at improvement of the Ukrainian territorial planning is being carried out, which as we hope will become one of the steps bringing our country closer to the EU standards.

Conclusions

According to many scientists, lack of state tangible and effective reforms, according to many scientists, can in particular lead to a deep destructive crisis. It became apparent that the economic recovery is not always associated with the replacement of president or prime minister, but requires implementation of deep social changes and raising public awareness about the development goals and objectives. In the current circumstances both prevailing in Ukraine and discussed above, the long and partially hidden crisis of not only the economic, but also people's spiritual nature may end in a collapse with the emergence of several political destructive forces. Their influence can promote the state disintegration and federalization with gloomy prospects to preserve its independence.

The Association Agreement signed between Ukraine and the EU on 17.09.2014, comprising 488 articles addressing the measures Ukraine has to implement by 2017, gives grounds to speak about the mixed "optimistic-pessimistic" development scenario. The plan of action draws clear objectives for the various power structures in Ukraine as well as timing and parties responsible for their implementation. In our opinion, only such joint efforts of Ukraine, with appropriate reforms and in cooperation with the EU as well as financial, institutional, informational and humanitarian support by other countries in the world will ensure implementation of the country's "optimistic" development scenario. The basic principles of the EU strategy "Europe – 2020" are the guiding light of this scenario. It contains three directions of development (smart growth, sustainable growth and inclusive growth) with outlined detalization, goals setting and flagship initiatives outlining.

Stabilization of the economy and solving the Ukraine's spatial development problems at the managerial level demands implementation of the following tasks:

1. Corruption eradication.
2. Preparation and hiring high level professionals into the public administration bodies.
3. Ensuring the priority of professional qualities factor over the party affiliation principle when forming the teams of managers at different levels (from the Cabinet of Ministers to local communities).
4. Internship of government employees in the EU Member States.
5. Implementation of cutting edge experience in the management training into activities of the National Academy of Public Administration under the President of Ukraine.
6. Ensuring development and implementation of the plans for cooperation between the scientists, managers and business representatives, subject to their transparent and detailed agreement with the public.
7. Compliance and implementation of international instruments signed by Ukraine (and to be signed) since independence. The Association Agreement between Ukraine and the EU, comprising 488 articles on activities that the relevant administrative bodies should undertake by 2017 is the most profound and binding document. The action plan draws clear objectives,

deadlines and entities responsible for their implementation. This and the other signed multilateral or unilateral agreements necessitate their integration into the national policy of Ukraine and first of all in its legislation. Implementation fundamental principles of sustainable (balanced) development in the state is facilitated by scrupulous analysis of loopholes in legislation hindering the implementation of well-known global conventions signed long ago by the Ukrainian officials: the United Nations Framework Convention on Climate Change (UNFCCC), UN Convention on Biological Diversity (CBD) and the UN Convention to Combat Desertification (UNCCD). During the 2014-2015 we performed the policy analysis in the area of natural resources and in the social sphere. In the course of the research, alongside with some positive phenomena, such as the Law "On the main measures (strategy) of the government's economic policy of Ukraine for the period of 2020", the order of the Cabinet of Ukraine "On National Action Plan on Environmental Protection" and others, we have found a number of gaps in terminology, lack of sustainable (balanced) development ideology understanding, obsolete approaches to management, no integration of major international conventions and EU resources into the national policies, absence of the national sustainable development strategy and action plan, etc. In our opinion, the problem of non-enforcement of the already adopted laws at different government levels and corruption remain the major negative factors.

8. Making a final decision on the models and priorities of the Ukrainian national development as well as development of its regions and certain industries with consideration to the global development stage priorities of the fourth industrial revolution, which were a key topic of discussion at the last World Economic Forum in Davos (20-23.01.2016)
9. Ensuring the proper level of funding and development of science in Ukraine. In the advanced countries, the future of global development is clearly linked to development of science and its achievements. The recent discussion topics at the UN Commission on Science and Technology included: "Technology as a driver of development", "The defining role of science, technology and innovation in the transition from the Millennium Development Goals to the objectives of sustainable development" "Urbanization – a challenge and an opportunity for the developing countries". Commission paid attention to the strategic forecast of the Agenda for development after 2015 and to the "digital" development. Unfortunately, even a cursory review of the state budget for 2016 gives a reason to believe that the future of Ukraine is viewed with no reference to scientific research.
10. Implementation of the Ukraine's European development vector, chosen by its inhabitants, shall be confirmed by their active work in the community at various levels and by top managers.

There are no doubts that elaboration of the state development strategy as a whole and of its individual regions must be in line with the Agenda for the 21st century and take all three most important components of development – economic, social and environmental in consideration. Only such action plan will lead to the end of environment degradation, conservation and sustainable use of natural resources, improvement of production efficiency and population welfare. One of the main directions for Ukraine to achieve sustainable development is the improvement of spatial society organization and its interaction with nature. Thereby, it is clear that implementation of the Sustainable Spatial Development Strategy in Ukraine is a necessary step which will put together all types of planning and contribute to promotion of effective public policy. In our opinion, the Strategy should include five main objectives: improvement of spatial organization and using the

potential of polycentric development; functional integration and using territorial capital to enhance competitiveness and provide smart and inclusive growth; increasing communication accessibility; reduction of negative impact on the environment; improvement of governance quality, in particular spatial planning.

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