

O. Topchiev

V. Oliynuk

T. Melnuchenko

THE CONCEPT OF TERRITORY GEOPLANNING IN UKRAINIAN GEOGRAPHY

X-th congress of the Ukrainian geographical society took place in march of 2008, on which geoinformation and geoplanning paradigm were discussed as conducting directions in modern geography [2, 9]. General scheme of territory planning of Ukraine is developed and authorized in 2001 [3]. Presently, the territory planning schemes are developed for some regions of country. The concept of **territory geoplanning** was included in methodology and practice of modern Ukrainian geography. It is necessary to notice, that in the past as the geographical discipline a so-called **regional planning** has received development, which developed the project schemes of settlements and location of economy for rather small planning raions. The territory geoplanning deduces this problem on a qualitatively new level – regions, countries and continents.

The purpose of **territory planning (geoplanning)** is a formation of comfortable social-natural environment of people live activity, greatest possible preservation of natural-resource potential of territory, safe and convenient settlements of population, economically effective and ecologically safe location of economic activity, maintenance rational koevolutional, noosferical interaction of society with nature. We offer for discussion the synthetic approach to problems of territory planning, in which the integrated components of a landscape environment – nature, population, economy are considered, and in the chapter of a corner the substantiation of their rational spatial combinations and interactions on each site, in each region, in each country as a whole is put.

Briefly we shall consider the main methodological principles of territory planning of regions used in the Ukrainian geography.

The analysis of a role and place of region in an economic complex of the country. The socio-economic functions of region in the country are caused by its geographical location, including its geopolitical and geoeconomic location, by natural-resource, labor-resource, infrastructural potential, level and type of economic development, features of structure and specialization of economy, volume of foreign economic activities, depth of socio-economic reforms. The functions, on which the region occupies conducting positions in the country, should be priority and in development of the schemes of territory planning, serve a majorant in a substantiation of its perspective territorial organization. And on the contrary, there is not enough important socio economic functions of region suppose those or their other transformations, and including in a context of territory planning.

Formation of a natural framework of region ecological safety. The methodology of nature protection and maintenance of ecological safety essentially changes last years in Ukraine. In 1970 years orienteers of ecological safety of territory **the extreme allowable concentration** (EAC) of polluting substances in an environment were mained. The ecologists carry out monitoring "of hot points" – places of choices and dumps of pollution, standardized and regulated them. The specification of natural-reserved fund (NRF) was legislatively established later: in each region and in the country as a whole NRF should make not less than 5 % of the general area. This specification with all evidence is small and besides not differenced for different zones. In 1990 years the Ukrainian geographers have apprehended the concept of **ecological networks** developed by the European Union. According to the Seville strategy (1995) in Europe the formation of ecological network began which further was extended on the countries of East Europe in the form of a so-called **Emerald ecological network**. During 2000-2004 years in Ukraine the laws on formation of a national ecological network of Ukraine were accepted and the development of the program of creation of ecological network for the period 2000-2015 years is begun. Since 2000 the development of the concepts and programs of formation of regional ecological networks (in regions

and Autonomic Republic (AR) of Crimea) is conducted. In some regions [5, 6] and AR of Crimea this work is already completed.

Such way, now the ecological safety of regions is regulated by three criteria in Ukraine: 1) not breaking limit of ELC of the basic pollution in emissions and dumps of ecologically dangerous objects; 2) presence NRF at a level of the specification (not less than 5 % of territory); 3) generated ecological network, which forms a natural skeleton of ecological safety of region.

The formation of regional ecological networks in Ukraine occurs in conditions very high agricultural and industrial discovering of territory, relative flash approach, and insufficient share of lands of NRF. The first development of the concepts and programs of creation of regional ecological networks testify that the ecological networks can occupy 15-25 % of territories of region [5, 10]. What criteria of grounds can be included in structure of ecological network in the given conditions?

First of all, it is objects and territories of NRF, on the basis of which the natural nucleuses (regions) of regional ecological networks are created. Here enter the wood and tourist-recreational lands, areas of water-bog arable land. The main reserve of formation of ecological networks in conditions of Ukraine there are grounds of water fund. This category of lands is precisely allocated in the Land and Water codes of Ukraine. Such categories of lands of water fund are legislatively established: 1) reservoir zones; 2) coastal protective strips; 3) coastal strips; 4) strip of tap of water; 5) zone of sanitary protection. For all versions of such lands the specifications of their allocation on area and rules of their economic use are established. Unfortunately, in conditions of radical land reform, which passes in Ukraine, the land designing lags behind a real situation on 7-15 of years. It means, that the lands of water fund can be allocated on district (in a real) only in 4-8 years and now no rules of their use can be realized.

Significant reserve for formation of ecological networks **represents low-yield and degraded agricultural lands**. Ukraine singles out unfairly high level of agricultural cultivating of territory, which can reach 90 %, and turning up of lands (70 %). As a result of mass turning up of lands on slopes, unreasonable meliorations (drainage, irrigation) the share of low-yield and degraded-eroded, salted underflooded, polluted lands has reached 20-30 % and more in many regions. The most part of such lands is necessary for removing from agricultural processing, to preserve and to transfer to the status of natural arable lands. These lands together with lands of water fund should become a basis for ecological networks.

In the Ukrainian geography the theoretical **model of rational territorial organization of economy** in the form "of the polarized landscape" (B.B. Rodoman, 1974) is popular. The idea of polar (poling) concentration and delimitation of biosphere and technosphere becomes more and more obvious: it is impossible to stop socio economic development and to turn " back to a nature "; at the same time it is fatally dangerous to increase by modern rates anthropogenic impact on a nature; there is one way – maximal poling delimitation of territory with intensive economic activity and reserved not so broken biosphere. At this the transitions from one pole to another should be echeloned and gradual.

At the figure 1 the scheme (cartoid) of a natural framework of ecological safety of territory – ecological network is submitted. Its elements are biosphere nucleus – the reserved sites, buffer zones – sites with the minimal economic loading, which protect biosphere nucleus, ecological corridors connecting nucleuses and the buffer zones in complete territorial structure and provide normal biogeochemical flows into biosphere. Let's remind, that the purpose of an ecological network – preservation of a landscape and biological variety, and social function of a natural framework of ecological safety of territory – safeguarding of comfortable conditions of live activity of a society.

Formatting of settlements systems. Ecistic (settlement) factor is the most important component of territorial organization of society. From the one site, it is the base factor, as the settlements systems have the own genesis and own history. From the other site, ecistic factor is dynamical also such dynamics can be essential and noticeable in territory planning. **The settlement systems** have own generalized (system) characteristics, among which popularity, density of the population and settlements, infrastructural connections. The type and rank of settlement system is determined by the basic kinds of economic activity of population and by general level of anthropogenic loadings within the limits of settlement system. In such context of the special attention deserve agglomerations and natural zones of big and average cities. At the present day, the prospective administrative-territorial reform is discussed. In project developments of the perspective administrative-territorial device of the country are offered two new administrative-territorial units – city-region (big city together with its suburban area) and city-raion (average city with suburban area) [10]. A key task of ecistic in development of the concept of geoplanning is the classification and systematization of regional and local settlement systems according to parameters determining general character of using of nature, economic activity and levels of anthropogenic loadings on natural environment. It is suppose, that to different types of settlement systems correspond the own specific tasks of territory planning.

The framework of anthropogenic loadings on natural environment (figure 2) is an original antipode of a natural framework of ecological safety of region. Its basis is made by the settlements, transport communications, lands of different economic purposes and use, and also some socio economic objects representing certain ecological thread, – so-called "hot points" and "hot areas". Creation of map of framework of anthropogenic loadings on territory basically is not complicated, if the appropriate parameters and specifications of such influences are known. In the Ukrainian geography the geocological concept "influences-changes- consequences" (V.S. Preobrazhenskii, 1985) has received distribution. According to concept anthropogenic **influences** on natural environment certain

changes cause, which, in turn, are accompanied by those or other negative **consequences** essentially changing an initial situation. The new cycle begins: changed (in the worse party) environment is exposed by new influences, which result will be new changes giving new negative consequences. The task of geographical ecology is forestall a part of the most intensive chain "influences-changes-consequences" [8, 11 and others].

In research of a spatial framework of anthropogenic loadings it is a lot of not enoughed methodological directions and methodical questions. A key question is **systematization of settlements by levels of them anthropogenic loadings**. It is obvious, that, first of all, they depend on popularity of a settlement, and its functional type. It is in addition necessary to take into account structural-technological features of economic complexes of settlements, especially of cities, the necessary facilities of infrastructure, their ecological infrastructure supply, in particular. For urban settlements is important presence-absence of the qualitative general schemes, schemes of the land-economic device of city, its functional zonation, schemes of planning of a suburban zone.

The methodological development of principles of territorial organization of suburban zones of big cities and agglomerations is the important problem for geoplanning. Established, that the influence of the big city on suburban area echeloned and forms ring, belt, planning zone, in which structure is near, average (transitive), distant (peripheral) suburban zones. For each echelon (zone) of a suburban zone is characteristic set of socio economic functions on service of big city and interaction with its satellite [10].

The planning division on sectors is characteristic for suburban area of big city, in which suburban population is strongly attracted to main highway, and sectors, which do not have transport axis, wedge oneself into city building by park zones and sanitary-hygienic zones. As a result, natural zones of big cities have echeloned sector-ring organization, which is necessary to standardize and regulate by socio economic functions and kind of economic activity.

The suburban zones of big seaside cities and of big economic centers located on water objects (of the river, lake, estuary etc.) have own planning features.

Systematization of transport highways and other communications by levels of them anthropogenic loadings on environment, by spatial scales of influences, by required sanitary-protective zones is necessary for territory planning. Planning classification of transport highways and technical and engineering communications should take into account their kind (type), throughput, character of negative influences on natural environment and population. From the point of view of geoplanning the transport communications represent **biosphere barriers**, which divide natural environment on more fractional, the rather isolated territories and create serious obstacles for biochemical dislocations and flows in biosphere. Subject to formation of regional ecological networks as territorial complete structures of natural environment the problem of biosphere barriers receives signification of complication and acuteness [8, 11 and others].

Systematization of categories and kinds of economic land use – territories and water areas, coastal zones and contact strips is represented by less difficult. General systematization of economic land use of settlement, industrial, transport, agricultural, forestial, water industrial, recreational etc. – is known. More detailed classification of kinds of use of territory and water area is necessary which would take into account their large-smaller intensity and corresponding levels and estimations of anthropogenic loadings on environment. Planning systematization of kinds of land use should base on their qualitative distinctions (kind, subkind, type, subtype etc.), and also on character of them anthropogenic loadings on natural environment.

The analysis of **spatial compatibility-incompatibility of those or other economic functions** represents the special interest. In many cases the deficiency of territories concerning necessary and obligatory socio economic functions is observed. The practice of territorial imposings and combinations of different

economic functions is popular. Thus naturally there is a necessity of an estimation of greater-smaller territorial compatibility of those or other functions or their complete incompatibility and even alternative.

The examples of typification of territories by their industrial development are already known [1]. By criteria such systematization is a general level of industrial development (share of production of an industry into a general regional national produce) and the structure of industrial production (old and new industrial raions). The qualitative and quantitative characteristics of its anthropogenic loadings are necessary for the purposes of territory planning except of volumes of industrial production. First characteristics can be shown by classes of ecological hazard of branches and enterprises, second, – total and specific parameters of emissions of pollution into environment. The parameters of labour input, power consumption and resource capacity of the main manufactures are necessary also. The real zones of industrial pollution of different levels and necessary areas of sanitary protection of the population against such influences should draw a map.

In the general scheme of territory planning of Ukraine [3] is developed the systematization of agricultural use of territories. In its basis are fixed subregional and microregional specialization of agricultural production and its general structure (on a ratio crop and livestock industries). Thus outside of a field of sight there are its technological levels (biointensive agriculture, organic agriculture, trickle irrigation etc.), and also greater-smaller use of modern principles of territorial organization of a countryside. The account of these attributes is most important for planning territories: agrolandscape organization of countryside, landscape-planimetric organization of territory, circuit-melioration organization of agricultural lands etc. All within the limits of Ukraine is picked out eight **functional types of agricultural use of territory** and one **functional type of use of wood resource of territories** [3].

The developers of the General scheme of territory planning of Ukraine (V.I. Nudel'man and others) have made a map of economic zoning of territory, on

which have allocated nine **functional types of economic use of territory with prevalence of not agricultural activity**. Among them three types with prevalence of a manufacturing industry, different on levels of adaptability to manufacture of the basic manufactures. In separate types the territories with prevalence of a local mineral industry (building materials, mineral raw material) and depression territory of a coal industry are allocated. Two functional types form recreational territories with the advanced resort economy and tourism, and also frontier territories carrying out transit and transport-distributive functions.

Systematization and the classification of functional types of use of territories remains to one of the main problems of modern geography and geoplanning.

The general maps of frameworks of anthropogenic loadings are necessary for supplementing by display "of hot points" and "hot areas", which usually require radical geoplanning decisions on their localization and liquidation. Hot points can be sources high anthropogenic loadings and pollution of environment, among which separate economic objects, dumps and ranges firm household waste, warehouses and storehouses of mineral fertilizers and weed and pest-killer chemicals, cattle-breeding complexes and farms, burial ground of cattle). Hot areas can be the polluted water objects, career, irrigation system, location of military parts.

Geoplanning: the connected analysis of framework of ecological safety and anthropogenic loadings of region. At the figure 3 imposing a framework of ecological safety and anthropogenic loadings of region (figure 2) on a natural framework of its ecological safety (figure 1) is shown. The connected analysis of these two structures in many respects defines a subject domain of geoplanning of region, its main directions and tasks. The main questions, on which should give the answer the connected analysis of skeletons of ecological safety of anthropogenic loadings, are those:

- The degree of security of territory by sites of the not broken biosphere also is extensive of used natural environment;
- General level of anthropogenic loading, its qualitative and quantitative distinctions, features of spatial distribution;
- Degree of polarization of a landscape on mutual distance and delimitation "biosphere windows" and areas of the maximal economic loadings;
- Best-worse echeloned of sites with different economic use by way of gradual transitions from the large loadings to smaller and on the contrary;
- Negative influences of ecological barriers (transport communications) and problem of their crossing with ecological corridors;
- Feature of spatial distribution "of hot points" and " hot areas" and problem of minimization of their influences.

Figure 1. Model of biosphere organization of natural environment

Sites with intensive nature management and high economic loading

Sites with extensive nature management and small economic loading

Sites with minimal nature management

The unused reserved territories (biosphere "window")

Ecological corridors

Figure 2. Model of territorial organization of the population and economy (sociosphere and technosphere)

Cities - economic centres of different ranks popularity and economic potential

Kinds of economic use of grounds (from intensive to экстенсивным)

The communications (means of communication, transmission line and communication(connection), продуктопроводы etc.) different ranks

Figure 3. Theoretical model of territorial organization of system "nature - society"

Cities and urban areas different social-economic of ranks

Economic use of grounds and levels антропогенно-техногенных of loadings

- селитебные of ground of cities and урбанизированных ареалов with the maximal anthropogenous loadings on territory

- Ground of intensive economic use with high антропогенно-техногенными by loadings

- Ground of extensive economic use with moderate антропогенно-техногенными by loadings

- Unused grounds (especially protected natural territories)

биосферные corridors

биосферные barriers

Transport highways биосферные buffer zones

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