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TERRITORIAL STRUCTURE OF THE WEST-UKRAINIAN REGION SETTLING SYSTEM

STRUKTURA TERYTORIALNA SYSTEMU ZASIEDLENIA NA TERYTORIUM ZACHODNIEJ UKRAINY

Zarys treści: W artykule podjęto próbę charakterystyki elementów struktury terytorialnej systemu zasiedlenia Ukrainy Zachodniej. Określono zakres organizacji przestrzennej tego systemu, uwzględniając elementy społeczno-geograficzne zachodniego makroregionu Ukrainy. Na podstawie przeprowadzonych badań należy stwierdzić, że struktura terytorialna organizacji produkcji i rozmieszczenia ludności zachodniej Ukrainy ma charakter radialno-koncentryczny, co jest optymalnym wariantem kompozycji przestrzennej układu społecznego regionu.

Słowa kluczowe: system zaludnienia, Ukraina Zachodnia

Key words: settling system, West Ukraine

Problem Statement

Improvement of territorial structure of settling systems is among the major problems when it regards territorial organization of social-geographic complexes. Actuality of the problem is evidenced by introducing of the Territory Planning and Building Act, Ukraine, of 20 April 2000, and the General Scheme of Ukrainian Territory Planning Act, Ukraine, of 7 February 2002, both Acts establishing legal and organizational bases for planning, cultivation and provision of stable progress in inhabited localities, development of industrial, social and engineering-transport infrastructure (*Territory Planning and Building... 2002, General Scheme of Ukrainian Territory... 2002*).

Initial Premises

Need for improvement of territorial organization of productive forces on specific stages of development delineates a circle of problems that require scientific research.

When studying problems of settling in 50-70-ies of the 20th century, national geographical science focused the majority of its attention upon separate towns and cities, in particular, upon limitation of population increase in big cities, and to active growth of mid and small-sized towns. Processes of integration in economics and the formation of territorial industrial complexes gave rise to the development of integration in settling, as well as to the formation of group system of urban settlements (Pityurenko 1977). Much tighter links between urban and rural inhabited localities gave birth to a new scientific approach where urban and rural settlements are now regarded as a single system of settling (Dzhaman 2003, Dotsenko 1994, Nudelman et al. 1980, Pityurenko 1983). Territorial settling systems are the complex multistage functional-territorial formations functioning on different levels – from national to local. As any other social-economic system, they can not but have subjects of economic administration. That is why the role of improvement of state territory and its separate regions' organization is of increased importance (Dotsenko 2003, Pistun 1992).

Targets Statement

Regional settling systems are complex combinations of functionally interlinked and interactive, hierarchically subordinated urban and rural settlements formed in the process of development of regional social-geographic complexes. As a component (subsystem) of the raion social complexes, regional settling systems appear to become the carcass for their spatial organization. The present study aims to outline the elements that comprise territorial structure of the Western Region settling system, and define the carcass of spatial organization of the West-Ukrainian Social-Economic Macro-Region.

Study Material Interpretation

The West-Ukrainian Region system of settling is formed on the basis of economic complex that is industrially less developed than the Eastern, Podniproviskiy and Southern Macro-Regions. The greater part of its territories is significant for agricultural production and predominance of rural population. The West-Ukrainian Region was always distinctive for its low degree of urbanization. Though showing low indices of urbanization, it was in the 2nd half of the 20th century that the Region manifested the higher paces of it than the country on the whole. Population was growing up to 1994 in all groups of urban settlements, and, as a rule, the higher the settlement is populated, the higher is the population growth. After 1994, the population was only reducing in quantity. The beginning of a new century is characteristic for low degree of urbanization.

The West-Ukrainian Region belongs to earlier developed territories which could not but influence upon the formation of urban settling. Another feature of urban settling in this region is the predominance of small towns, 1/3 of which can not be as

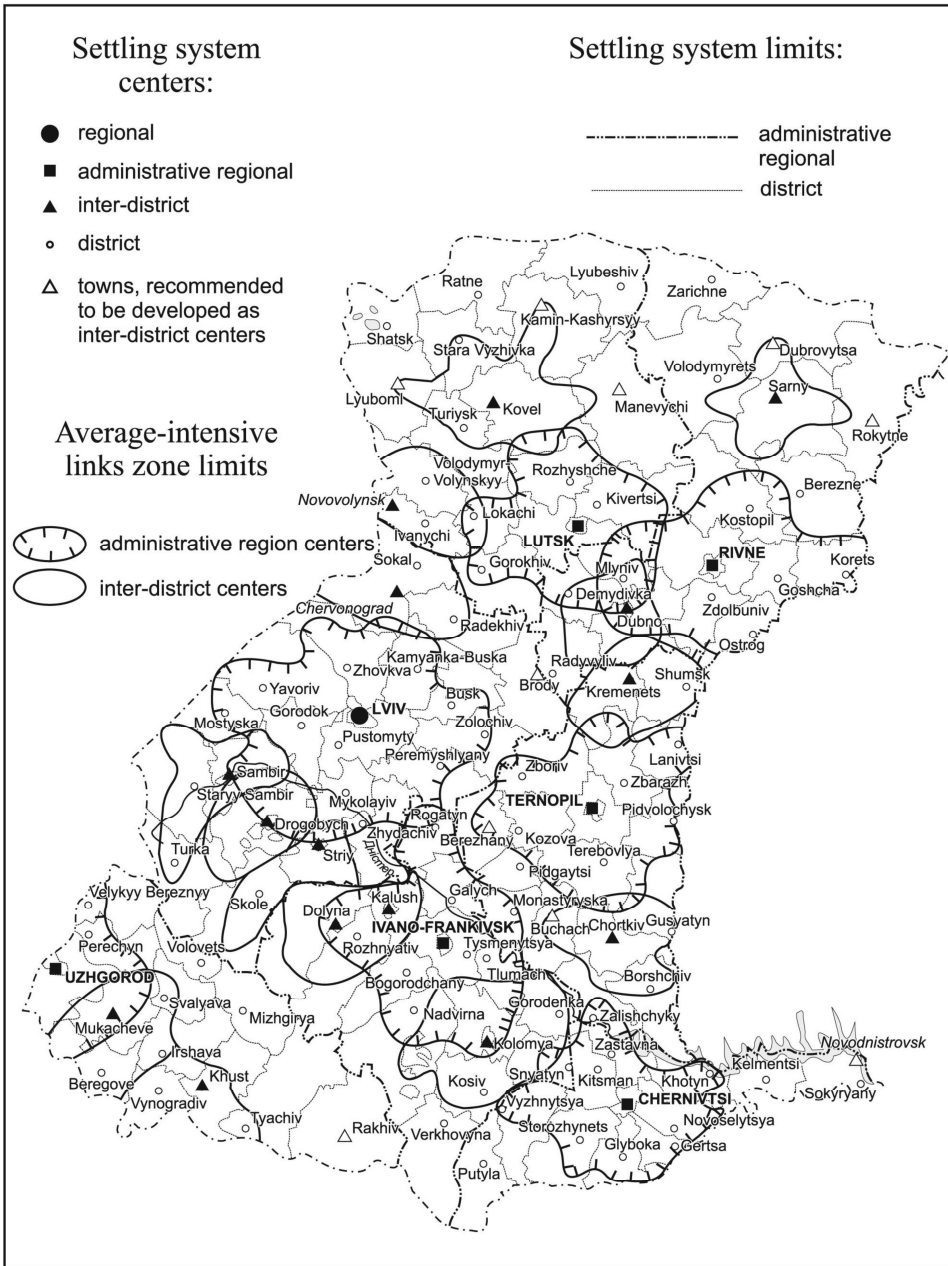


Fig. 1. Territorial structure of Western region settling system of Ukraine
Source: own study

signed a status of the city. Only the oblast centers are big cities, while the category of mid-sized towns is absent in 3 oblasts.

Having historically accumulated specific functions in territorial differentiation of social life, the cities (and their transport net) represent a social-economic carcass for the development of the territory forming a field of its influence upon surrounding settlements. Population is tending to concentrate in big cities and suburban areas, while the periphery of the region becomes the least populated. Urbanization gives birth to suburbanization. The analysis of the indices of suburbanization in suburban areas of big cities in the West-Ukrainian Region allows for the following conclusions: 1) the highest degree of suburbanization that has already involved raions – second-order neighbors is observed around Lviv, the Region's biggest city; 2) mid-degree suburbanization is observed around Chernivtsi and Ivano-Frankivsk; it has involved all raions – first-order neighbors; 3) lower and middle degrees of suburbanization distinctive for clear vector of its development are observed in the suburban areas of Rivne; it has already covered southern raions – first-order neighbors; 4) low degree of suburbanization is observed in suburban areas of Ternopil, Lutsk and Uzhgorod; it covers only the raions of these cities' same names.

Mean density of rural population in the West-Ukrainian Region 1.7 times exceeds the national index for the same, while the villages are populated 35% higher on the average, and the share of small settlements (up to 200 inhabitants) is almost twice less than that for the whole country.

The order of location of the centers and sub-centers of settling, the density of urban net, the proportion between the population and the set of functions performed by the first and second order cities-neighbors, the configuration of transport net, the transport accessibility, etc are of great importance in the formation of territorial structure of settling systems.

Territorial structure of the axes of the production organization and the settling in the Western Region settling system is radial-concentric, representing the most optimal variant of the axes of the regions' social carcass spatial composition (Fig. 1). Lviv, the center of the former administrative-territorial formations, the capital of the West-Ukrainian Peoples' Republic, the center of former Lviv Economic Region, the regional scientific center in the system of Ukrainian Academy of Sciences, etc., is a clearly expressed inter-oblast center, a nucleus of regional system of settling. The city is 3.2-6.2 times more populated than the oblast centers-neighbors of the first order and is a nucleus of the largest economic node in the Western Region. In the meridian direction, Lviv is in the center of this system (coefficient of symmetry – 0.96), and is slightly displaced westwards in latitudinal direction (coefficient of symmetry – 0.52).

Western Region system of settling includes 7 oblast's (sub-regional), 21 local inter-raion's and 107 raion's local settling systems of different levels of development and formation. The oblast settling systems combine inter-raion and raion local systems into one integer. The oblast center as an administrative, economic, industrial, trade and cultural-educational focus, becomes a strongest system-forming factor. This is especially specific for the West Ukrainian Region, since the oblast centers here are 5.3 times more populated than the other oblast's towns (according to the empiric rule "rank – size" of Zipf formula, the first town in the rank should be twice

more populated than the second). In the Chernivtsi Oblast, the breakup between the first and the second town is specifically large – 17 times, whereas the same for the Lviv Oblast is 10, Ternopil – 8, and Rivne – 6 times.

The oblast centers form nuclei for the sub-regional systems – the largest economic nodes with their formed inter-raion local settling systems. Towns with developed functions of inter-raion significance representing an intermediate chain in hierarchical structure of functional city types between the oblast and the raion center, performing a part of organizational and servicing functions of the oblast center in remote raions of an oblast, belong to the basic supporting centers of the oblast settling systems.

The Lviv Oblast system of settling holds a central position in the territorial structure of settling in the West-Ukrainian Region. It has an advantageous social-geographic placement, a higher level of economic development if compared to other oblast systems, a higher level of already formed territorial-production complexes, and of the settling system itself. Settling system here is most urbanized. It concentrates 1/3 of urban population, 36.4% of cities and towns, and 1/4 of townships.

Lviv is three times more populated than Chernivtsi, a second-populated city in the region, i.e., it exceeds the parameters allowed by a “rank – size” empiric rule. It was as far as in 1956 that Lviv was included to a list of 48 big cities where building of new industrial enterprises as well as their expansion was forbidden by a special Decree of the Government of the Ukrainian SSR to help limit said cities’ growth. The ban affected on further population dynamics in Lviv. The Lviv Oblast system of settling is today distinctive for the densest net of urban and rural inhabited localities, and the excess of the quantity of cities/towns over urban-type settlements. It was during 60-80ies of the 20th century that natural transformational processes of rural settling were taking place, these being induced by the industrial development of the oblast, the growth of the Lviv city agglomeration and the formation of the industrial nodes of the Prykarpattia and the Lviv-Volyn Industrial Region. The oblast’s population was strenuously tending to migrate towards the agglomerated areas formed around Lviv and the town grouped systems of Drohobych-Boryslav-Truskavets-Stebnyk, Striy-Mykolayiv-Noviy Rozdol, Sokal-Chervonograd. In rural inhabited localities within the agglomerated areas, the quantity of population increased during 1960-1989 from 10% to 30% and more.

The Lviv Oblast system manifests strictly expressed radial-circular territorial structure of settling axes. The circle, formed along Prykarpattya (on the south), and the eastern, northern and southern oblast peripheries, contains major oblast’s towns – Sambir, Drohobych, Striy, Khodoriv, Zolochiv, Brody, Chervonograd, Yavoriv. The first three settlements together with Chervonograd form the centers of inter-raion local settling systems. They are optimally located in relation to Lviv and rationally cover the oblast’s periphery by their zones of influence, decreasing in such manner the negative impact of large distance between the oblast center and the provincial raions. Lviv inter-raion local settling system is the most developed and formed system in the oblast and the whole Western Region. The border of Lviv’s zone of mid- intense links passes along the line Sambir-Drohobych-Striy-Rohatyn (Ivano-Frankivsk Region)-Zolochiv-Busk-Chervonograd, which basically coincides

with the isoline of the Lviv demographic influence field potential $E = 250$ persons/km². The contours of the zone of Lviv's mid-intense links are almost circular, since regional center is expressly distinctive for its productive, social and demographic potentials, as well as for dense road and railway net that radially disperses from Lviv in all directions. Zones of influence and attraction of inter-raion centers are asymmetric, the radiuses of their influence zones towards Lviv are considerably less than from it. This is specifically characteristic for the Sambir and Striy inter-raion local settling systems. Settlements located in the Starosambir and Turka mountainous raions tend towards Sambir, whereas these of the Skoliv Raion tend towards Striy. The north-eastern part of the Lviv Oblast is left uncovered by the zones of influence of the centers of inter-raion significance.

The linear axis of territorial structure of sub-regional settling systems is characteristic for the Ivano-Frankivsk, Ternopil, Rivne and Zakarpattya Oblasts. The order of disposition of the centers and sub-centers is very important for the formation of settling systems represented by the linear axis.

The Ivano-Frankivsk Oblast represents the most favorable territorial settling structure. Major arteries of railways and roads pass parallel to the Prykarpattya. The main nucleus of the oblast settling system – an Ivano-Frankivsk inter-raion local system – is located in the central part of the oblast and between two other inter-raion settling systems. Such placement of the sub-centers with respect to the main center of the oblast settling system is favorable for the development of direct links with the center and forms the optimal zones of influence upon surrounding settlements. Kolomiya and Kalush, the mid-size towns, serve to be the inter-raion centers. Kolomiya and Kalush-Dolyna inter-raion local settling systems are formed on the basis of the economic nodes of the same name. The systems' zones of influence are asymmetric: smaller radius is turned towards Ivano-Frankivsk, bigger – to peripheral part of the oblast. Otynya, an urban-type settlement in the Kolomiya Raion located between Ivano-Frankivsk and Kolomiya, enjoys administrative and production links with its raion center, while the set of links with its oblast center is much broader, though labor and social links still prevail. This is why Otynya is more tending to Ivano-Frankivsk and is attached to the Ivano-Frankivsk local inter-raion settling system. The zone of mid-intense links of Ivano-Frankivsk covers south-western part of the Ternopil Oblast, while the northern part of the Ivano-Frankivsk Oblast is in the same zone for the Lviv Oblast, and its eastern part – for the Chernivtsi Oblast.

Similar territorial structure of settling has formed in the Ternopil Oblast, though it is small towns (Chortkiv and Kremenets) that appear to be the centers of inter-raion significance. The towns are 2,5 times smaller than the inter-raion centers of the Ivano-Frankivsk Oblast. Chortkiv and Kremenets inter-raion local settling systems are formed on the basis of the economic centers of the same name. Two communication types – from Ternopil southwards – represent transport axis in meridian direction, while it is only a highway that represents it northwards, thus weakening the links' intensity. Kremenets has a railway communication only northwards (towards Dubno). Major intro-oblast labor and social-consumer links are the burden of only the automobile transport. Southern part of the oblast is in the zone of mid-intense links with Chernivtsi, while its south-eastern part – with Kamyanets-Podilskiy.

Eccentric disposition of its nucleus – the Rivne inter-raion settling system together with 3 inter-raion local settling systems – is the peculiarity of the Rivne Oblast settling system. The zone of the inhabited localities' mid-intense links with the oblast center covers the oblast's central and southern parts. Another inter-raion settling system – the Dubno system – is located in the south clearly showing south-westward asymmetry. Sarny stand out for its inter-raion functions in the north. Kuznetsovsk, a new town built in the vicinity of the Rivne Atomic Power Station could have become an inter-raion center in conditions of poor evolution of towns in the northern parts of the Rivne and the Volyn Oblasts. However, since the production profile of its main enterprise belongs to the group of potentially significant ecological risk, it seems appropriate to develop it as an isolated settlement.

The Zakarpattya Oblast settling system represents the least efficient version of “center and sub-centers” disposition. Uzhgorod is located at the very beginning of the linear axis near the state border. Since disposed on the other side of the state border, a significant part of its field of demographic influence upon the surrounding settled territory is of no significance for the whole oblast. Mukacheve – the first big sub-center of inter-raion significance – is situated not far from the oblast center. Zones of both settlements' demographic influence are mutually covered, thence total territory of their influence is considerably less than it could be provided that the center and the first sub-center of the oblast settling system were optimally disposed. Khust – the second big sub-center of inter-raion significance – is located in the middle of the linear axis of the oblast settling system. A considerable part of the Zakarpattya Region is disposed beyond the influence zones of the centers of inter-raion significance.

The Chernivtsi Oblast settling system is mono-centric, with only one inter-raion local settling system that has formed on the basis of the Chernivtsi economic node. Territorial structure of inter-raion system carcass is radial. Eastern and south-western parts of the oblast stand beyond the zones of influence of inter-raion centers.

A triangle axial composition is the carcass of the Volyn Oblast settling system. Lutsk, the oblast center, with Kovel and Novovolynsk, two mid-size towns, the centers of inter-raion significance, stand on the peaks of the triangle. The oblast center has a clearly expressed eccentric disposition, which complicates servicing functions of the population inhabiting the oblast's northern and central parts. It is Kovel that performs said functions in the central part of the oblast. Radial axis of territorial structure of production and settling is peculiar to the Kovel inter-raion settling system, formed on the basis of the same name economic node. Novovolynsk inter-raion settling system has formed on the basis of the Lviv-Volyn Coal Basin in the north-west of the oblast.

Inter-raion local settling systems are the major chains in the territorial structure of settling in the oblasts. The completeness of the formation of the oblast settling system depends upon the level of their (chains) development and coverage of the oblast territory. Insufficiently developed net of the oblast's inter-raion centers and weak development of their inter-raion functions make the raions significantly differ in social-economic life. Rational development of the net of these centers presupposes that their zones of influence cover the whole oblast's territory.

The raion local settling systems are differently developed, which is explained by the territory size, the quantity of population and inhabited locations on the territory, settlement population and population density, the quantity of urban settlements and its population, peculiarities of urban settlement allocation on the raion's territory, the raion center size and the degree of its disposition centricity, development of communication net and transport accessibility, economic-geographical location, etc. Population in the raion centers varies from 244 000 (Rivne) to 2500 inhabitants (Hertsya, Chernivtsi Oblast), that is, it is different almost 100 times. 4 district centers of the Western Region have over 100 000 inhabitants, 6 of them – from 50 000 to 100 000, 16 – vary from 20 000 to 50 000, 34 – from 10 000 to 20 000, and 47 have less than 10 000 inhabitants. The functions of raion centers are performed by 79 towns and 28 urban-type settlements. Urban-type settlements-district centers are peculiar for the Volyn (8) and the Rivne (6) Oblasts, while there is none urban-type settlement-district center in the Lviv Oblast. Population in the raions varies from 331 000 (Rivne Raion) to 16 700 inhabitants (Demydiv Raion, Rivne Oblast). Population density is different from 369 persons/km² (Ternopil Oblast) to 22 persons/km² (Rokytne Raion, Rivne Oblast). The number of settlements in the raion varies from 165 (Zhovkva Raion) to 24 (Hertsya Raion). Urbanization degrees from 82,8% (Ternopil Raion) to 7,8% (Hertsya Raion). Urban settling in the raion is represented from the city agglomeration (the Drogobych Agglomeration, 4 cities and 3 urban-type settlements) to single urban-type settlements (in 16 raions).

The raion local settling systems are formed on the basis of economic complexes of the raions; the raion centers usually appear as their centers, these simultaneously being the centers of nodal intro-raion local settling systems. Nodal local settling systems with small towns, big villages or urban-type settlements as the centers are formed in localities that are distant from the raion center. This is most clearly observed in the raions with eccentric raion disposition. The raion local settling systems represent holistic territorial formations, though, depending upon their disposition with respect to the oblast and inter-raion centers, their portions may belong to different inter-raion local settling systems. Thus, settlements of the Snyatyn Raion are included to different inter-oblast settling systems: the Zabolotiv intro-raion nodal settling system is a part of the Kolomiya inter-raion settling system, while the same of Snyatyn – to the Chernivtsi inter-raion local settling system.

Primary local territorial settling systems formed on the territories of the City, Township or Village Councils, represent the lower chains in the hierarchical classification of the territorial settling systems. Social links, stipulated by the needs of population vital activity, i.e., everyday life commodity provision, services, education, health care, labor links, represent the major system-forming links. The quantity of inhabited localities, included into the primary settling systems, majorly depends upon peculiarities of rural settling. 103 rural settlements in the Dubno Raion are united into 23 Village Councils, i.e. 4,5 villages are included into one Village Council on the average. Meanwhile, there functions one Village Council in almost each village in the Kosiv, Zastavna and Tysmenytsa Raions. Spatial organization of settling has none strict assignment of primary local settling systems to nodal systems: a part of them is directly included into the raion settling system.

Formation of economic nodes and centers together with considerable density of rural population and transport net has become the decisive factor for the appearance and the development of “pendulum” labor links in the West-Ukrainian Region. Occupying 7th place in the list of Ukrainian most populated cities, Lviv has ranked 3rd (after Kyiv and Kharkiv) for the number of “pendulum” labor migrants. It was before the world economic crisis that Lviv accepted 130 000 worker migrants. Another centers of gravity for “pendulum” worker migrants were Ivano-Frankivsk (62 400), Chernivtsi (37 500) and Ternopil (21 500), while Rivne (16 500), Lutsk (14 100), Drohobych (13 000), Uzhgorod (over 13 000), Kalush (8700), Kolomiya (8000), Sambir (7900), Mukacheve (6800), Striy (5200), etc were the other significant centers for the same.

Economic crisis, steep decline in production, growth of unemployment have reduced the extent and the intensity of local “pendulum” worker flow, though economic problems make people seek for employment elsewhere. With low rates of the level of employment, inhabitants from the Lviv, Ivano-Frankivsk and Zakarpattia Oblasts are most frequent workers outside the limits of their settlement of residence.

Conclusions

The Western Region system of settling is a complex combination of functionally interlinked inhabited locations whose territorial placement is specifically peculiar for as follows: centers and sub-centers of settling systems perform several system-forming functions of different hierarchical ranks; inhabited locations are displaced in the zones of influence of two or more towns-settling system centers, while said zones overlap each other; direct inclusion of local settling systems into a system that is one taxonomic rank higher is not a necessity; inhabited localities of specific raion may be assigned to different inter-raion settling systems.

A considerable breakup in the category sequence as regards their magnitude between the regional center and the centers of the oblast systems, and between the oblast and the inter-raion centers is the most characteristic feature of the structure of major centers and sub-centers of the West-Ukrainian Region settling system. The most developed oblast settling systems are observed in the Lviv Oblast; the Ivano-Frankivsk and the Chernivtsi Oblasts manifest a medium level of development, while the least developed are the Volyn, Rivne, Ternopil and Zakarpattia Oblasts. To help improve territorial structure of regional settling system, it should be done as follows: 1) functional potentiality of inter-raion and raion centers must be strengthened; 2) inter-raion centers must be provided with the status of the towns of oblast significance (Kremets, Chortkiv, Sarny); 3) economic basis and functions of inter-raion significance must be developed in the towns having favorable social-geographic position for the aim of improvement of the net of inter-raion centers for a more complete coverage of the peripheral areas of the oblasts by the zones of influence (Brody – in the Lviv Oblast; Rakhiv – in the Zakarpattia Oblast; Novodnistrovsk – in the Chernivtsi Oblast; Berezhany and Buchach – in the Ternopil Oblast; Kamin-Kasyrskiy, Lyuboml and Manevychi – in the Volyn Oblast; Dubrovytsia and Rokytno – in the Rivne Oblast).

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Summary

Elements of territorial structure of West Ukrainian regional settling system are defined, as well as West Ukrainian social-economic macro-region social-geographic complex spatial organization carcass is marked. The conducted research allows for the statement that territorial structure of West Ukrainian settling system carcass and that of industrial organization is of radial-concentric form, which represents the most optimal model for regional social carcass axes spatial composition. Administrative regional (sub-regional) settling systems, included into Western regional system, possess clearly expressed territorial settling structures, namely: radial-circular, linear, triangular and homocentric-radial. The structure of West Ukrainian regional settling system major centers and sub-centers reveals a significant breakup, in respect of their value, in categories sequence, between the regional center and administrative regional system centers, as well as between administrative regional and inter-district centers.