РЕГІОНАЛЬНА ЕКОНОМІКА

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A. Y. Yakymchuk, Doctor of Economic Sciences, Professor,
R. L. Navrotskyi, Applicant,
N. E. Kovshun, Candidate of Economic Sciences, Professor

NATURAL RESOURCES POTENTIAL AS INNOVATIVE AND INVESTMENT DEVELOPMENT PROSPECT

Urgency of the research. *An important condition for the development of the region is taking into account natural resource potential and its particular usage, because it is linked to efficient economy of the region.*

Target setting. *Under modern conditions of economic management and Ukraine's striving toward Europe, the significant environmental improvement as well as smart use of natural resources system integration have not been realized. All this determined the choice of the specific topic of the research paper, formed the subject, the purpose and the target of the research.*

Actual scientific researches and issues analysis. *Economic aspects of the use of the natural resources potential have been researched in studies of the established national scientists, especially of V. A. Holian [1], A. S. Kycha [5], A. P. Nezhyvenko [8], Y. B. Oliinyk [10], M. A. Khvesyk [13], L. M. Cherchyk [14] and others. Such foreign scientists as D. Wardle and M. Jonsson [17], A. Zielińska [19].*

Uninvestigated parts of general matters defining. *There is much tension around the issue of smart use of natural resources potential of Ukraine, particularly true it is observed under current crisis conditions caused by the troubled political and subsequently economic situation in the country.*

The statement of basic materials. *The article analyzes the natural-resource potential of the Rivne region. The basic allocation of natural resources has been demonstrated. The SWOT-analysis of the use of natural resources potential of Rivne region have been completed.*

Conclusions. *Rivne region is rich on different mineral deposits causing some differences in the economy development. The occurrence of the unique in Ukraine amber deposit has caused many economic and political problems relating to its unlawful extraction. The losses for the economy and budget of Ukraine due to this are estimated at 20 billion US dollars yearly.*

Keywords: *natural-resource potential; natural resources; mineral raw materials.*

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А. Ю. Якимчук, д. е. н.,
професор,
Р. Л. Навроцький, здобувач,
Н. Е. Ковшун, к. е. н.,
професор

ПРИРОДО-РЕСУРСНИЙ ПОТЕНЦІАЛ, ЯК ПЕРСПЕКТИВА РОЗВИТКУ РЕГІОНУ

Актуальність теми дослідження. *Важливою умовою розвитку регіону є врахування природо-ресурсного потенціал та його особливості використання, оскільки саме від цих умов залежить ефективна економіка регіону.*

Постановка проблеми. *У сучасних економічних умовах господарювання, європейських прагненнях України, не відбулося суттєве покращання стану довкілля, а також запровадження системи раціонального використання природних ресурсів. Все це зумовило вибір даної теми наукової роботи, сформувало її предмет, мету та об'єкт дослідження.*

Аналіз останніх досліджень і публікацій. *Економічні аспекти використання природно-ресурсного потенціалу досліджувалися у працях відомих вітчизняних науковців, зокрема В. А. Голяна [1], А. С. Кича [5], А. П. Неживенка [8], Я. Б. Олійника [10], М. А. Хвесика [13], Л. М. Черчик [14] та ін. Значний вклад за даною тематикою у науковий доробок внесли такі зарубіжні вчені як Д. Вардлі та М. Джонсон [17], А. Зелінська [19].*

Виділення недосліджених частин загальної проблеми. *Проблема раціонального використання природно-ресурсного потенціалу України стоїть надзвичайно гостро, особливо актуально це простежується в сучасних кризових умовах, зумовлених нестабільністю політичної ситуації у країні, а, як наслідок, й економічної.*

Виклад основного матеріалу. *У статті проведено аналіз природо-ресурсного потенціалу на прикладі Рівненської області. Показано основне розміщення природних ресурсів області. Здійснено SWOT-аналіз використання природно-ресурсного потенціалу Рівненської області.*

Висновок. *Рівненська область багата на різноманітні корисні копалини, які зумовлюють певні відмінності у розвитку господарства. Наявність єдиного в Україні родовища бурштину, створило багато економічних та політичних проблем щодо його незаконного видобутку. Втрати для економіки, бюджету України від якого оцінюються у понад 20 млрд дол. США щороку.*

Ключові слова: *природо-ресурсний потенціал; природні ресурси; мінерально-сировинна база.*

Urgency of the research. An important condition for the development of the region is taking into account natural resource potential and its particular usage, because it is linked efficient economy of the region.

Target setting. Under modern conditions of economic management and Ukraine's striving toward Europe, the significant environmental improvement as well as smart use of natural resources system integration have not been realized. For this reason, it is necessary in conservation of natural resources potential to implement into the economy innovative instruments that showed itself to good advantage in developed countries of the world. All this determined the choice of the specific topic of the research paper, formed the subject, the purpose and the target of the research.

Actual scientific researches and issues analysis. Economic aspects of the use of the natural resources potential have been researched in studies of the established national scientists, especially of V. A. Holian [1], A. S. Kycha [5], A. P. Nezhyvenko [8], Y. B. Oliinyk [10], M. A. Khvesyk [13], L. M. Cherchyk [14] and others. Such foreign scientists as D. Wardle and M. Jonsson [17], A. Zielińska [19] made a significant contribution to the scientific potential on the given subject matter. However, up to the present the single ways of the smart use of the natural resources potential (NRP) that would significantly improve the actual situation were not developed.

Uninvestigated parts of general matters defining. There is much tension around the issue of smart use of natural resources potential of Ukraine, particularly true it is observed under current crisis conditions caused by the troubled political and subsequently economic situation in the country. All this demands reasoning of ways of smart use of natural resources potential using the experience of economically developed European countries. Our view is that elaboration of the related measures could be ensured according to the analysis of dynamic structural changes in NRP of a certain region and factors caused them.

The research objective. Substantiate improving possibilities of the smart use of the natural resources potential of Rivne region based on patterns of the given territory and new economic challenges.

The statement of basic materials. In a resource-constrained environment, the efficient use of the inner potential of the territory is to be supposed as the first development resource. Local executive bodies and local government authorities shall augment this potential. The natural resource potential is thought of as total natural resources and environmental conditions locating in current geographical boundaries and satisfying economic, ecological, social and other requirements of the society [8, p. 64].

The glossary "Regional economy" gives the following definition: "Economic regional potential is the collective capability of regional sectors of the national economy to perform, to construct capital projects, to transport goods, to provide necessary human services. Scientific and technical achievements, production capacity, availability of transport facilities and economically active population, quality of its professional qualifications, degree of development of service industries and other conditions determine the economic potential [10, c. 64]. The development of a specified region varies with the state and maturity of available natural resources, industrial, labor, financial, infrastructure potential. The structure of the regional potential can be presented schematically (Fig. 1).

Natural resources potential. The natural resources potential has the largest value among the listed components. The total resources existing on the territory and involved in the economy define the state and development prospect of the country and its regions. "Methodic recommendations for shaping of regional development strategies" provide the list and characteristics of endopathic development causes of the region [6], where the state and forecasts of land, water, forest, mineral, recreational resources and the state of environment define the natural resources potential. The availability of the relevant infrastructure is also important.

Our country lists around 20 thousand mineral deposits, at that the larger half of their explored reserves are commercially developed. It is worth noting that iron ore reserves amount more than 14% of the global reserves and manganese ore reserves – 43%. Furthermore, Ukraine holds leading positions with reserves of uranium, titanium, zirconium, lithium, sulfur, graphite, kaolin, coal clays,

potassium salts. However, the lack of adequate supplies of oil and gas causes dependence on their exports and has an adverse effect on the social and economic development of the country in tote [1].

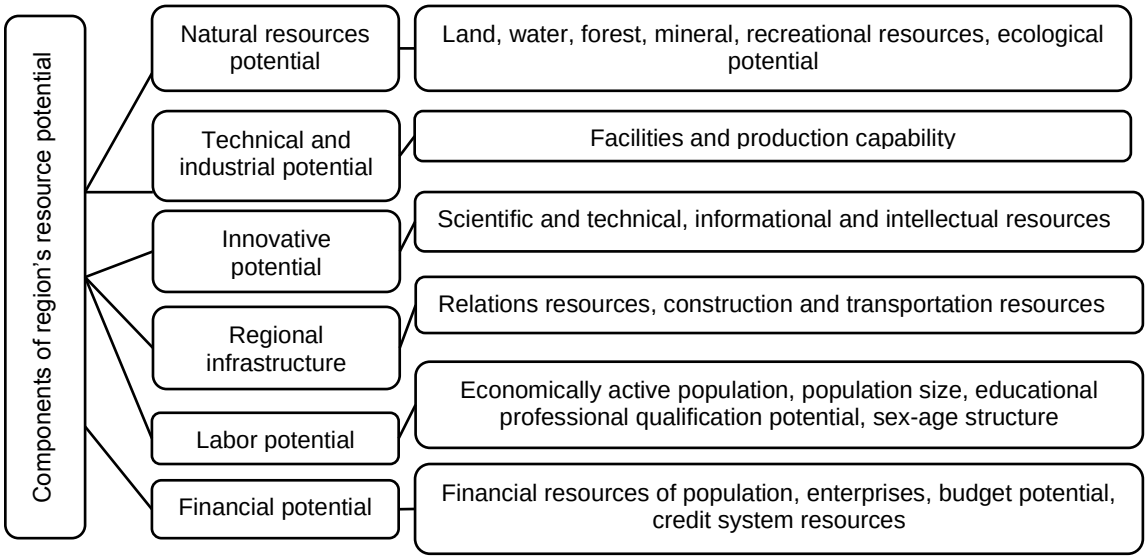

Fig. 1. Main components of region's natural resources potential
Source: compiled by the authors based sources [1; 2; 7; 8; 13]

Structural changes in the natural resources potential of a certain region are going on with the course of time, development of productive forces, change of economic system. For example, Rivne region permanently holds positions below average in Ukraine in scientific researches on the given subject matter. According to the data of V. P. Rudenko [10], Rivne region has a total resource potential at the level 3% of the all-Ukrainian. Therewith, land resources (more than 50%) surpass by far in potential's structure.

In researches of the natural resources potential of Ukrainian regions by the grade approach, Rivne and Volyn regions have the low [3]. However, the structure has no explicit imbalances to the advantage of a certain component. Let's take a closer look what builds currently the resource potential of Rivne region.

Water resources. Rivne region like the most western and northern regions of Ukraine is rich in surface waters. 171 river with the length of over 10 km flow through Rivne region, 130 lakes, 12 water reservoirs, 1 543 ponds are located in the region. The biggest lakes of Rivne region is Nobel (4,99 km2) and Bile (4,53 km2). Bile lake has the maximum depth of 26,8 m. Nobel is located in the floodplain of Prypiat, its maximum depth is 11,3 m[2]. By volume of water diversion in the year 2013 Rivne region ranks No. 16 in Ukraine having a lead over Chernihiv, Vinnytsia, Khmelnytskyi, Symu, Ternopil, Chernivtsi, Volyn, Zakarpattia and Ivano-Frankivsk regions. The water potential of the region enables all economy branches of the region using during production surface and subterranean waters to be fixed up with water resources; stimulates further development of fishery enterprises, the tourism and recreational area [11].

Forest resources. Forest resources are located in the region unevenly and generally concentrated in its northern area. Scientists' researches regarding economic effects of ecosystems performance shall be taken to be an important part. For example, forest ecosystems of Ukraine lead in oxygen generation the neighboring countries such as Belarus, Poland, Slovakia, and Hungary [15]. The economic effect amounts over 1.8 million US dollars per year. For example, only the Rivne Nature Reserve ensures the vital activity of the population compared with the half population size of Rivne region [16].

Land resources. According to the data of the Chief Directorate of the State Land Agency in Rivne region, the total lands of the region amount 2,0 million ha. The overall structure of the land fund can be found in Fig. 2.

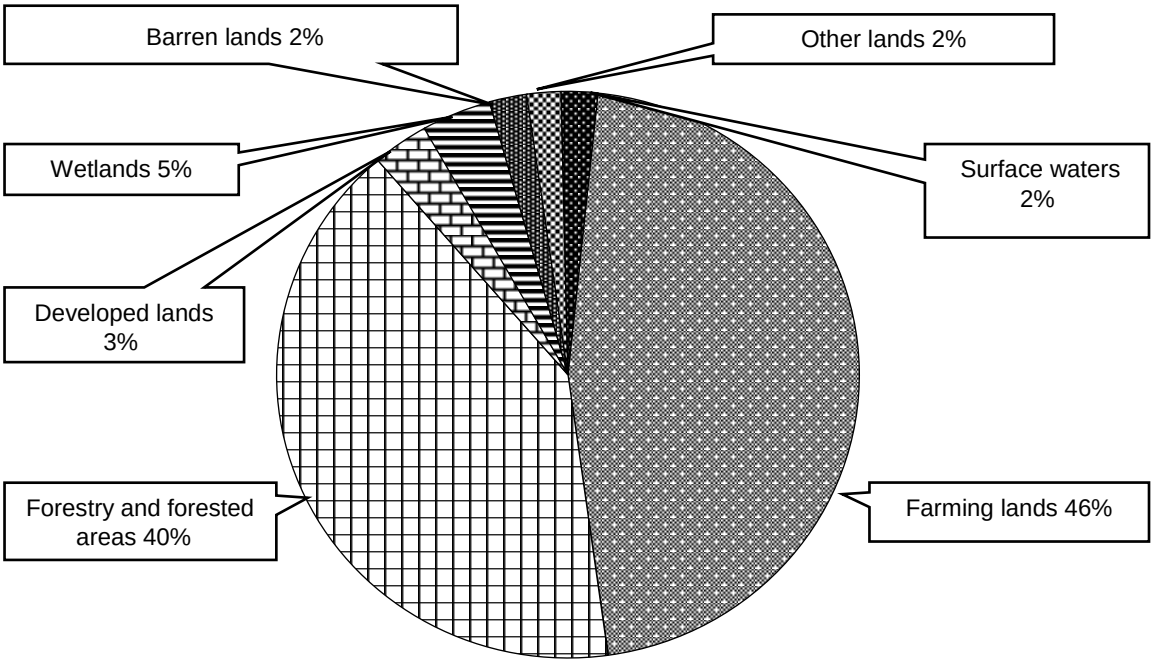

Fig. 2.Structure of the regional land fund
Source: compiled by the authors based sources [2]

The lands placed for different purposes at disposal of citizens amount 38,4%, of agricultural enterprises – 17,8%, of forestry enterprises – 32,9%, reserve lands occupy 12,9% of lands. Newly created agro-organizations lease for commercial agriculture 242,8 thous. ha of shared lands[2].

148.2 million UAH were received on the government and local budgets from land use in the year 2013. In the structure of the defined receipts the land rental is overriding – 84.4 million UAH (57%). 46.1 million UAH (31%) were received from payment of land taxes, 15.1 million UAH (10%) – from sale of land and 2.7 million UAH (2%) – at the cost of indemnity for losses of agricultural and forestry production. The peculiarity of land resources as a component of NRP of Rivne region is the occurrence of low-productive soils in region's northern part and substantial amount of nonproductive agricultural lands. The lower (compared with central and southern regions of Ukraine) level of agricultural lands capacity for an inhabitant should be noted also.

Infrastructure. The essential component characterizing the regional resource potential is the infrastructure development level. Rivne region is substantially provided with the developed transport communication networks, sections of which pass through the directions of international European roads, facilitate pass of transit traffic flows through the region that causes its strategic value in the economic development of the country [10]. The low development of infrastructure elements substantially slows the further economic growth in the region.

It would make sense to focus in the present research on *the mineral resources* base that in our view has not received the proper appraisal in many researches. In the region 357 mineral deposits and underground water deposits presented by 18 types are registered, among them 104 are commercially developed, for 110 special permits for subsurface use are issued. Table 1 represents the mineral resources base.

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Deposits of peat and sapropel located primarily in the northern areas of the region amount two thirds of commercial minerals [7, 9]. In composition of the resources potential construction raw materials (building stone, sands, clay loam, coal deposits) achieve a dominant position, assured resources of them ensure a future development of manufacturing of rubble, facing plates, cement, lime, calcium-silicate and ceramic brick, mortar mixture etc. The unique deposits of basalt that in their physical, mechanical and chemical properties are suitable for rubble and crushed stone production, architectural construction products, basalt fiber and mineral wool production are located in Rivne region. Phosphorites deposits that are used as mineral fertilizers are located in Zdolbuniv and Ostroh districts.

Table 1

Use of the mineral resources base of Rivne region

Sr. No.	Types of commercial minerals	Number of deposits		Issued permits for subsurface
		Total	Developed	
1	Peat	125	12	17
2	Amber	3	1	2
3	Glass-making sand	2	2	1
4	Kaolin	2	1	1
5	Pegmatite	3	1	1
6	Cement raw materials	2	2	1
7	Raw material for mineral wool	4	2	3
8	Facing stone	7	4	5
9	Building stone	42	29	33
10	Building sand	27	11	14
11	Brick and tile raw materials	51	11	12
12	Agrochemical raw materials (phosphorites)	1	0	1
13	Raw material for liming of acidic soils	2	1	1
14	Coal feedstock for acidic branding	2	1	1
15	Building chalk stone	4	1	1
16	Sapropel	37	0	0
17	Drinking and service waters	36	21	21
18	Mineral underground waters	7	4	4
Total		357	104	110

Source: compiled by the authors based sources [2; 10; 11]

The region – the unique in Ukraine – has explored amber deposits: Klesivske in Sarny district, Vilne in Dubrovytsia district and Volodymyrets Skhidnyi in Volodymyrets district, amber reserves amount over 116 t. That brand is now affecting the whole natural resource potential of the region.

Firstly, comprehensive prospecting of its reserves will considerably influence contribution of mineral resources to the potential's formation. Although only three deposits are researched, the amber sand strata range in nearly all region's northern districts. Potential amber deposits in the region are substantial. By results of exploratory evaluation works conducted by the Rivne Geological Expedition, expected amber resources in some areas in Dubrovytsia, Sarny and Volodymyrets districts amount to over 1 500 t [2].

Secondly, the unlawful amber extraction leads to the loss of this resource. The monoblock pumps enable to extract only 30%, the rest is left in the ground. Amber deposits lie in strata at a depth of 3-10 meters and these strata are collapsed as a result of corrosion – sands getting to them from above deplete the deposits.

Thirdly, the actual system of amber extraction saps the natural resources potential of Rivne region. The forest are being destroyed. Changes in the regimen of water bodies in Polissia are perceptible. The ecological situation in districts of unlawful extraction becomes significantly worse.

The made analysis of the main resources of Rivne region enables to change its assessment proposed above [3]. According to our research, as of the year 2015 the total resource potential per

unit of territory will make up 85 grades. The growth occurs mainly at the expense of the mineral component. However, in real time the degradation of the situation is expected. If the actual practice of subsurface use will be preserved, then despite new proven deposits of amber, copper, basalts etc. the natural resources potential will not grow. The damage doing to the other its components, the degradation of the ecological situation in the whole will lead to depreciation of NRP of Rivne region.

With the purpose of looking for ways of efficiency improvement of formation and use of the natural resources potential it is worthwhile carrying-out of the SWOT-analysis, that is to reveal possibilities of the development and threats (Tab. 2).

Conclusions. Rivne region is rich on different mineral deposits causing some differences in the economy development. The occurrence of the unique in Ukraine amber deposit has caused many economic and political problems relating to its unlawful extraction. The losses for the economy and budget of Ukraine due to this are estimated at 20 billion US dollars yearly.

Table 2

SWOT-analysis of the natural resources potential of Rivne region

Strengths	**Weaknesses**
– unique in Ukraine developed amber deposits; – considerable reserves of minerals for building materials manufacturing (clay, sand, limestones, chalk, marlstones), glass and porcelain (kaolins); tufa and granular phosphorites; – building stone's reserves close to the borders of the European Union; – unique reserves of basalts suitable for production of high-efficient insulating materials; – 20 percent of all-Ukrainian peat reserves; – availability of main railway lines and motor roads close to mineral deposits; – water resources endowment of the territory 1.3 times larger than average in Ukraine and available water supply per an inhabitant – 2 times larger; – forest cover of the region's territory is 2.4 times larger than the average value in Ukraine.	– exceeding powers of government's centralization relating to mineral deposits; – expensive licences for minerals exploration and extraction; – lack of funds for geological exploration works; – low level of minerals exploration; – lack of governance, commercial and institutional mechanism of sustainable mineral raw materials extraction (especially amber); – radiation pollution of 56% of region's territory due to the accident at the Chornobyl Nuclear Power Plant; – poor quality of motor roads of local significance.
Possibilities	**Threats**
– increase of investments in development of mineral resources; – creating devices for receipt of profit by local budgets by way of opening amber procurement units, holding of amber stock auctions etc.	– lack of legislation reforming concerning streamlining and accelerating procedures of conciliation and licensing, the tax and customs legislation, the system of state monitoring and control in the area of minerals extraction, especially the statutory misregulating the issue of amber extraction legalization; – potential radiation threat connected to the physical proximity of the Rivne Nuclear Power Plant and Khmelnytskyi Nuclear Power Plant.

The region's forest cover amounts to 36% what enables the development of the forest husbandry. As the research and experience of developed countries of the world show, the economy should take into account all economic effects in state's gross national income from performance of forest and marsh ecosystems. It enables to form the national environmental strategy, to substantiate economically the contribution of natural ecosystems to the state's GDP and to work out appropriate measures for conservation of the natural resources potential.

Consequently, Rivne region has significant availabilities for the dynamic development of the agricultural complex, industry, recreational sector, extension of international cooperation and provision of tourism and recreational services. However, the sustainable use of the actual NRP of Rivne region needs regulation of many economic and social problems connected with mineral resources extractions.

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