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ASSESSMENT OF SOCIO-ECONOMIC DEVELOPMENT AND ENVIRONMENTAL SECURITY OF THE REGION (ON THE EXAMPLE OF ATYRAU REGION)

Abstract. The socioeconomic development of the region is an integral part of the development of the national economy. Adaptations of various processes of effective management of economic entities occur, as a rule, at lower levels of socioeconomic systems. The study of best practices in the development of regions is relevant and in demand in the current economic conditions. Such economic development leads to the emergence of environmental problems, impedes the sustainable development of the region. Problems arise when the anthropogenic load on the territory of Atyrau region exceeds its ecological capabilities, due to the natural resource potential and the general stability of natural complexes to man-caused stresses. The development of the economy is connected with the impact on the environment, as the creation of new and expansion of existing production leads to positive economic and social results, but it also has negative aspects, in particular, the environmental situation may worsen. Therefore, an important scientific problem is the assessment of the impact of economic development on the environment. The article deals with the concept of social and economic potential. The urgency of the social and economic development of the region is determined. The calculations of the change in the gross regional product per capita, the structure of the GRP, and the indices of the volume of industrial production in the Atyrau region were made. Also, the main constituent elements of the environmental safety of the region were identified, and the ecological and economic situation of the region was assessed.

Key words: Socio-economic potential, economic development, industrial production, environmental safety, environmental problem.

Introduction. The socio-economic potential is one of the basic concepts of the economy, reflecting the real state of things, as well as the prospects for the development of various sectors of the regional economy. The fundamental characteristic visually representing the development of the economy is the increase in economic potential. In calculating this indicator, in addition to the generally accepted volume, quality and competitiveness of the products, it is necessary to take into account the development of the economic system itself, which ensures stable, efficient functioning, as well as prospects for the future. In the system of the national economy, production and regional organization, the economic potential is the material basis[1].

As we have mentioned above, the economic development of the region is the main indicator of its dynamics. Thus, it should be noted that the efficiency management of the regional development should be aimed at the rational use of the economic potential, i.e. to maximize efficiency with limited resources. In addition, the region's economic potential is not a constant. This indicator in most cases changes during the discovery of new deposits or new types of mineral resources and according to the statistics of the last decade the economic potential of the region is largely influenced by innovations. As the process of assessing innovations is difficult to perform it is proved to be not permanent, so respectively the economic potential is not constant.

Methods of study. To disclose the content of the paper and achieve the goals set by the given study, the following methods have been used: analysis and comparative study, integrated economic and ecological as well as system analysis.

Results obtained. With its huge economic potential Atyrau region plays a significant role in the socio-economic development of Kazakhstan. The number of companies with foreign investments is increasing annually and at the present the region cooperates with about 1000 companies from more than 50 countries. Such cooperation demands new forms of modern management, the latest world technologies and promote the development of business and other types of tourism. The region is one of the most balanced ones with the potential for further diversification of the economy. There are great opportunities for further development within the framework of the Eurasian Economic Union, as well as the beneficial proximity to the major Russian industrial areas. The region witnesses dynamic development in petrochemical, machine-building, food and construction industries[2].

Priority directions in economy of Atyrau region are fuel-energy, processing, fish industry and production of building materials. The industrial sector accounts for half of the gross regional product. According to its volume per person Atyrau region is on the first place in the republic. Volume of gross output of products (services) of agriculture, forestry and fisheries in January-March 2018 amounted to 7772.3 million tenge, which is more by 1.8% than in the same period of 2017. The volume of gross regional product for January-September 2017 comprised 3842.1 billion tenge at current prices[3].

Table 1 - Index of the physical volume of industrial products

	Index of the physical volume, %		The share in the total volume of industrial production January –July, 2018.
	January –July, 2018 by January –July, 2017	July, 2018 By July, 2017	
Industry, in total	112,5	112,0	100,0
Mining and quarrying	114,2	112,8	91,3
Manufacturing	102,2	104,3	7,7
Power supply, gas, steam and air conditioning	112,9	114,5	0,6
Water supply, sewage system, waste collection and disposal control	90,4	93,8	0,4
Note: the data in Table based on materials by Committee of Statistics of the Republic of Kazakhstan [9].			

The main industrial production is located in the city of Atyrau, as well as in Zhylyoi and Makat districts. The largest oil enterprises of the republic such as NCOC, LLP Tengizchevroil, JSC NC KazMunayGas, JSC ANAKO, JV Matin, CJSC Atyrau Oil Company, JSC KazakhstanKaspiShelf, JSC NIPI Caspimunaigas and others are located in these districts. The oil refining industry is represented by Atyrau Oil Refinery.

Besides, a new central processing facility named Bolashak has been build on the territory of Makat district to exploit Kashagan offshore field oil and gas delivered via pipelines. The share of manufacturing in the total volume of industrial output is insignificant. The agriculture of this region is poorly developed due to difficult natural and climatic conditions, as well as deficient water supplies suitable for the needs of agriculture and livestock. The structure of industrial production by kinds of economic activity of Atyrau region is shown in figure (1).

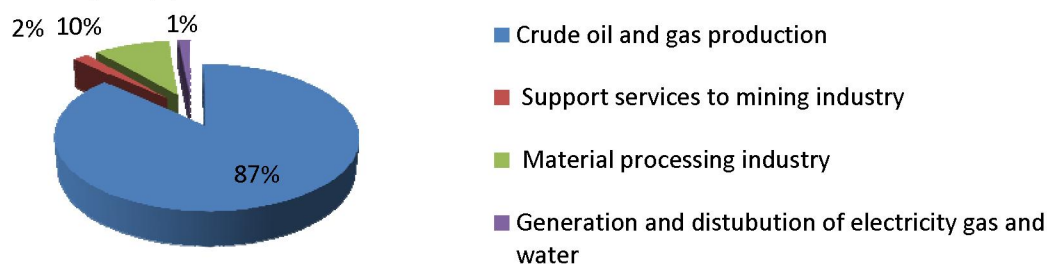


Figure 1 - Structure of industrial production in Atyrau region by January, 2018

Note: The diagram was created by the author on the basis of the materials of the Atyrau region statistics agency[9].

The volume of industrial production in January-March 2018 amounted to 1763811 million tenge in current prices, which is 12.2% more than in January-March, 2017. Physical volume index of industrial output was 114.5% in January 2018 compared with January 2017.

In the republican volume of produced oil products, the share of Atyrau Oblast comprised 65.30%. As part of state programs, the Government of the Republic of Kazakhstan has implemented a set of measures to develop the petrochemical industry by raw hydrocarbon deep conversion investment projects and high-tech industries for the production of petrochemical products with high added value[4].

The dynamics of socio-economic growth in the Atyrau region fully corresponds to the strategic guidelines of the President of the Republic of Kazakhstan, which creates the basis for the competitive development of the region. The largest share in the structure of industrial production is taken by crude oil and associated gas production, oil refining, electricity production and distribution[5].

Within the period of 2012-2017 oil production volume in the Atyrau region increased by 2.3 million tons while associated gas production increased by 1.6 billion per m3. At the same time in 2012 and 2014 there was a decline in oil production, which is associated with a major scheduled repair of production facilities of the second-generation plant, the injection of crude gas and the integrated processing line (KTL-2) of Tengizchevroil LLP. The dynamics of oil and associated gas production in the Atyrau region for 2013-2018period is shown in Figure 2.

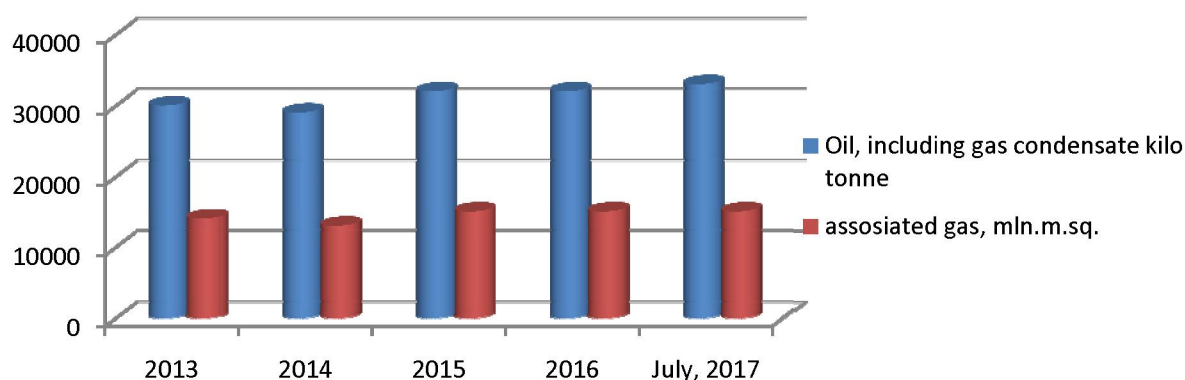


Figure 2- Dynamics of oil and associated gas production in Atyrau region for 2012–2017 period (July)

Note: The diagram was created by the author on the basis of the materials of the Atyrau region statistics agency[9].

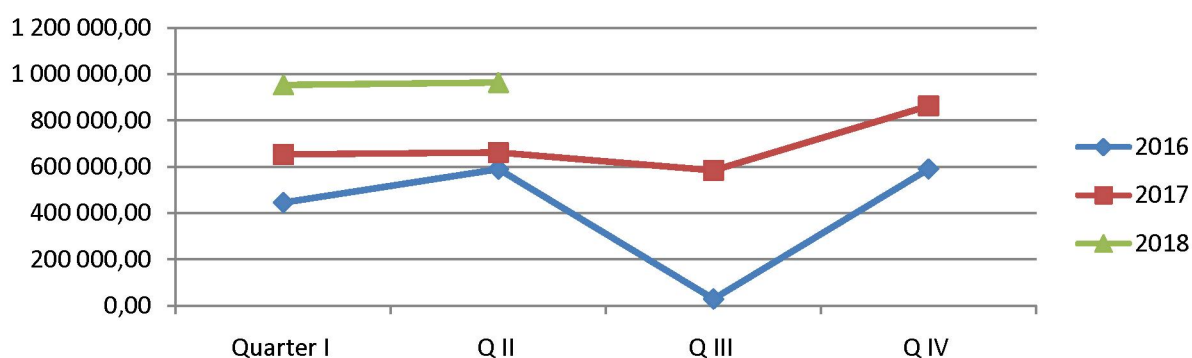


Figure 3 - Financial and economic activities of medium and large enterprises
* as of quarter-end

Note: The schedule was created by the author on the basis of materials of the department of ecology of Atyrau region[10].

As it is known, support of small and medium business is one of the main tasks targeted by our government. In fulfillment of the instructions by the Head of our State, voiced in the Address to the people of Kazakhstan, the Akimat of Atyrau region is carrying out work to provide comprehensive support to small and medium-sized businesses. There is an increase in the indicators of small and medium-sized

businesses, the number of employees in the region is growing steadily. Retail trade volume in January-March 2018 amounted to 63993,3 million tenge and increased in comparison with the corresponding period of 2017 (in comparable prices) by 2.8%. Sales turnover by private enterprises and individual entrepreneurs, including those trading in the markets, amounted to 60171.3 million KZT or 94% for the current year, property sales to foreign legal entities and citizens comprised 3822 million KZT or 6%.

As indicated above, the socio-economic development of Atyrau Oblast involves many sectors of the economy affecting all processes in the region, as well its stability and security. The efficiency of activities by economic entities and environmental safety is tightly interlinked. A high level of environmental safety can be ensured by a high level of production efficiency, contributing to establishment of enterprise resources channeled to finance environmental protection and human health protecting measures. On the other hand, a high level of environmental safety contributes to an increase in production efficiency by ensuring a reduction in morbidity and mortality rates, the growth of fertility and reproduction of resources of all kinds. There is a certain contradiction connected with the economic interests of business entities[6].

Along with the positive moments for the economy and social services, there are some negative aspects. Advanced level of industrial production and rapid growth of extractive industry have led to irreversible environmental consequences in the region. So, for example, exploitation of transport, plants and facilities using fuel and energy containing coal, oil or gas is the source air pollution in the region. The main pollutants of the atmosphere are automobile transport, thermal power plants, ferrous and non-ferrous metallurgy enterprises as well as oil and gas processing, chemical and other industries. Air pollution remains one of the leading environmental impact factors that have a negative impact on the natural environment. Emissions of local industrial enterprises to the atmosphere are more than one hundred thousand tons per year, 80-85% of which falls on the oil and gas sector. According to the reporting data of the oil and gas sector, from 9,053,923,507 m³ of associated gas was disposed 9 billion 226 million m³ produced by 12 enterprises in 2017.

Currently, 4 out of 15 oil and gas producing enterprises in the territory of Atyrau region, namely Tengizchevroil LLP, NCOC Company, Samek International LLP, Embamunaigas, flare associated gas, except using it for own needs[7].

Table 2 - General condition of atmospheric air in Atyrau, mg / m³

period	2016					2017				
	pollutants									
	H ₂ S	SO ₂	NO ₂	CO	NO	H ₂ S	SO ₂	NO ₂	CO	NO
overall	0,004	0,002	0,008	0,4	0,02	0,005	0,002	0,008	0,6	0,02
Threshold limit value.	0,008	0,05	0,04	3,0	0,06	0,008	0,05	0,04	3,0	0,06
Note: The Table was created by the author on the basis of materials of the department of ecology of Atvrau region[10].										

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There is an increase in the concentration of H₂S by 0.75 times compared with last year. The total gross amount of pollutants in 2017 was 158.192 thousand tons, including 144.746 thousand tons of emissions from stationary sources and 13.446 thousand tons from mobile sources.

The analysis shows that of the total volume of emissions the main share in air contamination of the region is taken by the enterprises of the oil and gas production and oil refining.

Therefore, for today the problem of atmosphere contamination mainly depends on the activities of enterprises engaged in oil and gas production, its processing and transportation.

According to reporting data 4,556.578 thousand tons of waste were accumulated in 2017(, 4,298.475 in 2016), in the region including sulfuric of 154,226 thousand tons (in 2015 - 9,983), production waste of 776,207 thousand tons (in 2016 1,303,922) and solid domestic waste was 3,626.504 thousand tons (in 2016 2,957,570). Generally, production wastes are formed in the result of oil and gas development, storage and transportation of hydrocarbon raw materials and construction works. In general, production waste is the result of the development of oil and gas fields, storage and transportation of hydrocarbon raw materials, as well as construction works[8].

Table 3- Volume of emissions to the environment (2017) tenge

All enterprises of the region	Authorized volume, tons year	Actual volume, tons year	Excess, tons year
JSC KaztransOil ZF ANU	19542,710	10,487	
CPC-K	4,102829	1,471599	
ANPZ LLP	16574,0	6,035	0,5694
JSC Embamunaigas	5959,675	4940,0	8,954210
TCO LLP	77,296	33,277	0
NCOC	208667,2738	76407,8	
Sazankurak LLP	102,802	64,4	
Prikaspien Petroleum Company LLP	96,0795	56	
Embamunay LLP	37,173316	26,788	
AF TOO Kozhan	257,32353	192,836762	
JSC Caspian Oil	925,3333	411,0	
Embavedoil LLP	67,0123216826	54,686	
Tobearal Oil LLP	76,75505266	4,6324569	
AO Matin Petroleum	416,0094087	152,2899878	
Anako JSC	401,065	0,2	
AFC Alties Petroleum International B.V.	463,7652114	216,3387	
UMG Atyrau AO ICA	137,9905247	8,620866	
AOEC JSC	6446,9568	3970,0	
Svetland Oil LLP	40,199	28,8	
LLP CaspiPromStroyNedvijimost	361,38969051	32,816	
Sagiz Petroleum LLP	1106,75	240	
TOO Trans Oil Terminal	167,12003124792	0,05633346	
KGP Spetsavtobaza	8724,441837090	27,65390215	
JSC Kaztransoil PF LPDS Kigach	42,18	13,79	
Kaztransoil JSC ZFBPTO and KO Atyrau	12,933	12	
Caspian ecology LLP	160,2113215	52,79166	
Gural LLP	47,9283233	10,430	

Note: The Table was created by the author on the basis of materials of the department of ecology of Atyrau region[10].

Thus, the uncontrolled activity of oil companies poses a potential danger for the development of the region and is one of the main environmental problems.

Conclusion. The environmental safety of the Atyrau region has been exposed to a number of serious threats, including the most basic ones such as: soil degradation, man-made desertification; depletion and pollution of water resources; air pollution; deforestation; irreversible reduction of biological diversity; destruction of the genetic fund of wildlife; activation of natural disasters and life-threatening industrial accidents; accumulation of toxic waste. Taking into account the increasing volumes of oil produced in the oil and gas fields of the Atyrau region and the Caspian shelf, and as a consequence, increasing the impact of the anthropogenic factor on the environment of the region, the problem of environmental safety of the Atyrau region becomes more and more important every year. Current funds allocated to the environmental activities of the region are included in the cost of production, and in terms of investments, are financed from enterprise profits. In any case, these costs lead to a decrease in the amount of profit that remains at the disposal of enterprise and in particular is supposed to be distributed among owners. This circumstance becomes a brake on the implementation of effective environmental projects. But on the other hand, cutting back on environmental measures ultimately leads to serious social and economic consequences, which reduce the efficiency of production, and hence the profit claimed by the owners[11].

To improve control over the state of environmental security, a set of legislative, regulatory and institutional measures are required. The following measures are proposed to be implemented:

- The international cooperation;
- Legal maintenance of ecological safety;
- Normative maintenance of ecological safety;
- Information support of ecological safety;

Thus, the solution of any environmental problems is practically inseparable from the economic ones; while irrational nature management leads to economic losses, and the lack of funds prevents to cope with environmental problems.

Despite the fact that environmental safety issues are the subject of attention of many scientists and

experts, the essence of environmental safety as an economic category remains insufficiently studied. It is necessary to emphasize the basic role of the economic component or economic basis in solving environmental problems and ensuring environmental safety, which is confirmed by a number of researches.

The ecological problem is a problem not of one state, but of the whole planet. The world is now striving for the principle of sustainable development, i.e., ensuring balance between solving social and economic problems and preserving the favorable state of the environment.

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АЙМАҚТАҒЫ ӘЛЕУМЕТТІК-ЭКОНОМИКАЛЫҚ ДАМУДЫ ЖӘНЕ ЭКОЛОГИЯЛЫҚ ҚАУІПСІЗДІКТІ ҚАМТАМАСЫЗ ЕТІЛДІ БАҒАЛАУ (АТЫРАУ ОБЛЫСЫ МЫСАЛЫНДА)

Аннотация: Аймақтың әлеуметтік-экономикалық дамуы ұлттық экономиканың дамуының ажырамас бөлігі болып табылады. Экономикалық субъектілерді тиімді басқарудың түрлі үдерістерінің бейімделуі, әдетте, әлеуметтік-экономикалық жүйелердің төменгі деңгейлерінде орын алады. Аймақтар дамуының озық тәжірибесін зерттеу мәселелері қазіргі заманғы шаруашылық жағдайында өзекті және сақталуға ие болып отыр. Мұндай экономикалық даму экологиялық мәселелердің туындауына алып келеді, аймақтың тұрақты дамуына кедергі келтіреді. Мәселелер Атырау облысы территориясында антропогендік жүктеме табиғи ресурстық әлеуетіне негізделген және техногендік жүктемелерге табиғи кешендердің жалпы тұрақтылығына байланысты экологиялық мүмкіндіктерінен асып түскен кезде туындайды. Экономиканың дамуы қоршаған

ортаға әсер етуімен байланысты, себебі жаңа өндіріс құру және өндірістің кеңеюі оң экономикалық және әлеуметтік нәтижелерге алып келеді, бірақ оның сондай-ақ теріс жақтары да бар, атап айтқанда, экологиялық ахуал нашарлауы мүмкін. Сондықтан маңызды ғылыми мәселе экономикалық дамудың қоршаған ортаға әсерін бағалау болып табылады. Мақалада әлеуметтік және экономикалық әлеует тұжырымдамасы қарастырылады. Мақалада әлеуметтік және экономикалық әлеует тұжырымдамасы қарастырылады. Аймақтың әлеуметтік-экономикалық дамуының өзектілігі анықталған. Жан басына шаққандағы жалпы өңірлік өнімнің өзгерісі, ЖӨӨ құрылымы және Атырау облысындағы өнеркәсіптік өндіріс көлемінің көрсеткіштері есептелген. Сондай-ақ, аймақтың экологиялық қауіпсіздігін құраушы негізгі элементтері анықталған, аймақтың экологиялық-экономикалық жағдайы бағаланған.

Түйін сөздер: Әлеуметтік – экономикалық әлеует, экономикалық даму, өнеркәсіптік өндіріс, экологиялық қауіпсіздік, экологиялық мәселе.

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ОЦЕНКА СОЦИАЛЬНО-ЭКОНОМИЧЕСКОГО РАЗВИТИЯ И ОБЕСПЕЧЕНИЯ ЭКОЛОГИЧЕСКОЙ БЕЗОПАСНОСТИ РЕГИОНА (НА ПРИМЕРЕ АТЫРАУСКОЙ ОБЛАСТИ)

Аннотация: Социально-экономическое развитие региона является неотъемлемой частью развития национальной экономики. Адаптации различных процессов эффективного управления хозяйствующими субъектами происходят, как правило, на более низких уровнях социально-экономических систем. Исследование передового опыта развития регионов является актуальным и востребованным в современных условиях хозяйствования. Подобное экономическое развитие ведет к возникновению экологических проблем, препятствует устойчивому развитию региона. Проблемы возникают в том случае, когда антропогенная нагрузка на территорию Атырауской области превышает ее экологические возможности, обусловленные природно-ресурсным потенциалом и общей устойчивостью природных комплексов к техногенным нагрузкам. Развитие экономики связано с воздействием на окружающую среду, поскольку создание новых и расширение существующих производств ведет к положительным экономическим и социальным результатам, но имеет и отрицательные стороны, в частности может ухудшаться экологическая обстановка. Поэтому важной научной проблемой является оценка воздействия экономического развития на окружающую среду. В статье рассмотрено понятие социально - экономического потенциала. Определена актуальность оценки социально - экономического развития региона. Произведены расчеты изменения валового регионального продукта на душу населения, структура ВРП, показатели объема промышленного производства Атырауской области. А также выявлено основные составляющие элементы экологической безопасности региона, оценивается эколого-экономическая ситуация области.

Ключевые слова: Социально-экономический потенциал, экономическое развитие, промышленное производство, экологическая безопасность, экологическая проблема.

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