RESOURCE-SAVING PROBLEMS: WORLD EXPERIENCE AND KAZAKHSTAN

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ABSTRACT

The basic principle of modern policy both on state, and on regional levels – to provide existence of globally competitive, innovative and effective policy concerning efficiency of use of resource potential of economy. In this regard experience of resource-saving policy in the developed countries which shows that in the field of economy of material raw material resources the long-term resource-saving policy is the cornerstone of positive results deserves attention. In article the main approaches to resource-saving as to a factor of increase in efficiency of social production in the conditions of ensuring sustainable development in Kazakhstan are defined. The concept of "green economy" which purpose of realization is preservation and restoration of the natural capital is considered. Expected indicators of development of economy in usual and "green" scenarios are given. The international experience of practical realization of model of "green economy" is investigated. Implementation of the concept of "green economy" in the Republic of Kazakhstan as one of important instruments of providing a sustainable development of the country is considered).

Keywords: Resource-Saving, Green Economy, Green Growth, Natural Capital, Sustainable Development.

JEL Classification: A10, O1, Q00, Q3, Q3

INTRODUCTION

The world economy is on a threshold of new increase in the volume of investment into fixed capital, the national economies directed on improvement of quality, and future new social and economic structure assumes widespread introduction of resource-saving technologies (Inclusive Green Growth, 2015). That attention which in the last decades is paid to resource-saving, testifies to gradual understanding by the world community of that fact that the mankind reached limits of growth with which the way of its existence was in a conflict with the planet which generated the person. In the millennia human activity for satisfaction of vital needs was directed on withdrawal of the resources recently making annually billions of tons. There was an understanding of that natural resources aren't infinite that environmental pollution because of continuous increase in a production activity exceeds ecologically admissible norms, and the future is possible if to take extraordinary measures for restriction of consumption of all types of

resources, radical reduction of dumpings of waste (Voshoboynik, 2014; Kolmakov et al., 2015; 2017).

The modern period of development of economy of Kazakhstan is characterized by sharp increase in production and the subsequent use of natural resources (The concept of transition, 2013). The special place in this process is taken fuel and energy and mineral raw material resources. It can lead to emergence in the near future in the nature of irreversible processes as a result of which environment will become unsuitable for life. High level of pollution of environment waste, acceleration of growth and irrational use and consumption of natural resources, energy, all water systems, the geographical environment, deterioration of a condition of ecological systems, destruction of separate populations of animals cause the necessity of serious approach to the solution of problems of a condition of the biosphere already in the near future. Rational use of resources is the main factor guaranteeing transition of the Kazakhstan economy to a way of sustained economic growth and development. For Kazakhstan and its certain regions rational resource-saving the most effective and unique way of successful social and economic development and ensuring competitiveness of economy.

Follows from the above that rational resource-saving is an important factor of economic growth since represents (The concept of transition, 2013):

1. Strategic source of accumulation of production potential in saving of investments;
2. Formation and building of an effective export potential, active entry into the world market as the competitive subject of the international market relations;
3. Factor of rational environmental management, solution of environmental problems and optimization of nature protection strategy.

Allocation of a problem of complex and rational use of resources in one of key in the conditions of the market relations increases the importance of their economy (The concept of transition, 2013).

Research is based on use of scientific methods: generalizations from the particular to the general and from the general to the particular, analysis, forecasting, economic assessment. For research general scientific methods of systematization of data, the logical, system analysis and synthesis of data were used.

The purpose of article is justification of the scientific-theoretical principles of resource-saving as bases of sustainable development of Kazakhstan.

Resource-saving concept rather new, actual this problem became during transformations of national economy. Earlier in the economic theory and economic practice used such concepts as “economy of resources”, “regime of economy”, and “effective management of resources” more often. In modern conditions they are interpreted as “resource-saving”, however in interpretation of this term there is no unambiguity.

Most of scientists consider resource-saving as system of measures for ensuring rational use of resources, raw materials. So, (Zaytsev & Sckursky 1987) consider it as system or set of measures for ensuring rational use of resources, mainly due to their economy. Voskoboynik (2014), Vesnin (2015), Fatkhutdinov (2009) define resource-saving as a complex of the actions providing decrease in an expenditure of materials on a unit of production.

In our opinion, the concept of resource-saving has to be expanded and added. Resource-saving is a complex of the organizational and technical and economic measures directed on the rational and careful use of all types of the available resources based on processes of modernization of technological processes and widespread introduction of innovative technologies including in the sphere of energy saving.

Basis of resource-saving is complex use of natural and material resources, the maximum elimination of losses and irrational expenses, perhaps fuller involvement in economic circulation of secondary material resources and passing products.

Resource-saving has to be reached at all production phases and uses of resources: rationalization of production of natural raw materials, fuel, etc., the maximum use of the got resource, minimizing of losses during the transporting and storage; the most effective application of a resource in the course of production or non-productive consumption; identification, the account and full use of the secondary resources which are formed in the course of their primary consumption, first of all, for the intended purpose as full-fledged raw materials, a power source or heat, and also processing of waste and utilization of garbage.

Now resource-saving is one of priority problems of modernization of economy of Kazakhstan. It is connected with need of economy of natural non-renewable resources, growth of cost of their production, and also serious environmental problems. Because of limitation of some types of resources most good results of a production activity of any enterprise depend on rationality of their use. Many economists consider that it is expedient to develop production of these or those products in a certain branch due to the most effective use of some one type of resources.

In green economy, everything is to utilize the dwindling resources as rationally as possible. This is a type of economy directed at preserving the society and natural resources, as well as at repeated utilization of finished products. Green economy rides only on the so-called green or clean technologies. Many post-industrial countries are not far from the ecological crisis. Green economy introduction into these countries will help to avoid such. Thus, 2.5 million tons of pollutants are emitted into the atmosphere every year in Kazakhstan, amounting to 150 kg of emissions per capita, 80% thereof are generated by industrial enterprises (RK increases spending on environmental protection, 2017). All these facts necessitate a transition to green economy that will reduce pollution and, as a consequence, preserve natural resources. All statistics were taken from official sources.

RESULTS

The global problem of resource-saving caused need of development of "green economy". According to Kennet, 2015 only *"the green economy" is capable to stabilize economic systems and to balance interests of the person, the nature and effective use of resources.* The 40th World economic forum of 2010 which was taking place in Davos under the slogan *"To improve a condition of the planet: to rethink, re-plan, reconstruct the world"*, declared a new global course on "green economy" (the term replaced earlier existing concept "sustainable development") as the only way of further development. Integrating numerous analytical and program offers, UNEP also declared that the future decade (2010-2020) will be decade of "green economy".

Main objective of transition to "green economy" is ensuring economic growth and investment at simultaneous improvement of quality of a state of environment and social accessory.

The term "green economy" was for the first time used in work "Blueprint for a green economy" which is the program text for supporters of this still formed discipline in which center of attention there is an economy of a sustainable development.

From the moment of start in 2008 Initiatives of "green economy" (GEI) of the UN rapid growth of number of definitions and treatments of this concept is observed. Besides, some other terms, for example "green growth" or "gardening of economy" gained distribution. These terms

are used as the economies interchanged in the context of more and more wide range of branches, for example energy drinks or managements of natural resources.

The UN characterizes "green economy" as the economy promoting growth of welfare of the population and reducing risks for environment. As general characteristics of *"green economy" allocate: effective and rational use of natural resources, decrease in emissions of greenhouse gases and introduction of new, "green" technologies* (Bobyliov & Zakharov, 2012). The most authoritative and widely applied definition of this concept is formulated by UNEP: The *"green economy is an economy which provides long-term increase of welfare of people and reduction of an inequality, thus allowing future generations to avoid essential risks for environment and its impoverishment"* (Inclusive Green Growth, 2015).

In the same document the interrelation between concepts of "green economy" and a sustainable development is emphasized: The concept of "green economy" doesn't replace with itself the concept of a sustainable development, however is now more and more widespread recognition of that achievement of stability almost completely depends on creation of the correct economy. In decades when new riches were created with use of model of "brown economy", society didn't solve such problems as social marginalization and resource depletion, and we are still far from achievement of the objectives of development of the millennium. Stability remains the major long-term goal, but for its achievement we have to make our economy "green" (Inclusive Green Growth 2015).

For clearer understanding of essence of concepts of "green economy", "the green growth" and a sustainable development we will compare them through a prism of economic, social and ecological aspects (Table 1).

Table 1
COMPARATIVE CHARACTERISTIC OF "GREEN ECONOMY", "GREEN GROWTH" AND SUSTAINABLE DEVELOPMENT

Aspect	"Green economy"	"Green growth"	Sustainable development
Economic	Provides the economic growth, increase in volume of the income and employment, attraction state and private investments, formation of flexible economy, creation of new economic activity	Provides the economic growth and development; continuous economic progress taking into account a state of environment, more elastic, stable, operated high-quality economic growth, at the expense of new engines, green technologies, innovations, new workplaces, but not by building of GDP	Places emphasis on restriction of increase in production and consumption in economically developed countries, support of constant scale of economy, development and introductions of new technologies, reduction of investments into branches which operate the nature, and increase of specific weight of the knowledge-intensive branches and technologies
Social	Provides achievement by mankind of welfare, social justice, best quality of life, social development, reduction of a social inequality, fair access to limited resources	Provides achievement of welfare, including social, ensuring access of the poorest segments of the population to the main goods; satisfaction of demand in food production, rendering of services, construction of housing and granting energy	Provides preservation of the human capital, and reduction of number of the destructive conflicts, equitable distribution of resources between all members of society
	Is guided by reduction of environmental risks, deficiency, emissions of carbon dioxide in the atmosphere and	Reduction of number of emissions and minimization of pollution and influence on environment is guided by protection, support and preservation of natural assets,	Provides stability of biological and physical systems by support of use of secondary raw materials, minimization of quantity of waste, distribution of the reproduced power sources,

Table 1
COMPARATIVE CHARACTERISTIC OF "GREEN ECONOMY", "GREEN GROWTH" AND SUSTAINABLE DEVELOPMENT

Ecological	environmental pollution; on increase of efficiency of use of resources and energy; restriction of load of ecological system demands from all subjects of managing of ecological responsibility also	effective use of smaller quantity of resources and energy; ensuring climatic and ecological stability; debugging of harmony between economic interests and a state of environment	constructions of cleaning constructions, plants on processing of household and industrial wastes

The analysis illustrates similarity between three concepts. Concepts of "the green growth" and "green economy" coordinate among themselves and provide continuous development as the ultimate goal. Key difference of "green economy" from "the green growth" is seen in realization levels: the first includes strategic, directed on system calls the highest level, and the second provides greening of products, processes, services, technologists the lowest level. Each of the analyzed concepts provides harmonization of three components: economic, ecological and social. According to the experts UNEP, *the "green" scenario of development of world economy (providing annual investment into appropriate technologies about 1.3 trillion dollars) can provide by 2050 excess of total amount of real GDP for 16%, per capita GDP for 14% and reduction of needs of world economy for energy for 48% in comparison with the basic scenario* (Towards to "green economy" 2011*).*

For transition to "green economy" it is necessary to invest only 2% of world GDP in ten such key sectors as agriculture, housing and communal services, power, fishery, forestry, the industry, tourism, transport, utilization and processing of waste and water resources management (Porfiryev, 2013). Transition to "green economy" will render assistance to GDP growth; increase in the income per capita and to creation of workplaces in same or even higher rates than in traditional economy. Expected indicators of investment of additional 2% of GDP for development of "green economy" in comparison with results of their contribution to the scenario of usual development it is presented to Table 2.

Table 2
EXPECTED INDICATORS OF DEVELOPMENT OF ECONOMY IN USUAL AND "GREEN" SCENARIOS

Indicator	**2011**	**2030**		**2050**	
	Assessment	**Traditional scenario**	**"Green" scenario, %**	**Traditional scenario**	**"Green" scenario, %**
GDP (trillion dollars)	69 344	119 307	2,7	172 049	15,7
GDP per capita (dollars)	9 992	14 577	2,4	19 476	13,9
General employment (million people)	3 187	4 204	-1,5	4 836	0,6
Area of the woods (billion hectares)	3,94	3,83	7,9	3,71	21,0
Need for water (km^3/year)	4 864	6 78	-13,2	8 434	-21,6
Relation of volume of emissions to biological capacity	1,51	1,84	-21,5	2,23	-47,9
Need for primary energy (million t. oil equivalent / year)	12 549	17 755	-19,6	21 687	-39,8

Source: (Towards to "green economy" 2011).

DISCUSSION

The theory of green economy is based on impossibility of infinite expansion of spheres of influence in limited space, impossibility to demand satisfaction of the growing requirements at limitation of resources, everything that is on Earth is interconnected.

Many scientists consider that the "green economy" provides a sustainable development of the country. The sustainable development assumes complex coordination among themselves of three components – economic, social and ecological. "Sustainable development" represents one of the most modern global political and economic concepts. At Kazakhstan, so it developed historically, there are huge environmental problems which other countries didn't face. It is well-known that for many decades in Kazakhstan there was mainly raw system of environmental management with extremely high technogenic loads of environment. Therefore cardinal improvement of an ecological situation didn't happen yet, and it is characterized by degradation of natural systems that conducts to destabilization of the biosphere, loss of its ability to maintain the quality of environment necessary for activity of society.

The concept of "green economy" can be related to sectors (for example, power), to subjects (for example, pollution) or policy (for example, economic tools). By this term fundamental strategy, in particular on promotion of environmental policy into the forefront or to creation of favorable structure of economy can be also described.

Practical implementation of the concept of "green economy" provides: existence of effectively current legislation in key sectors of economy; need of increase in investments into "green" infrastructure; introduction of aspects of continuous production and consumption; support of researches and innovations; development and distribution of environmentally friendly technologies.

The concept of effective use of natural resources as transition to "green economy" depends on the solution of two adjacent tasks of maintenance of structure and functions of ecosystems (stability of ecosystems) and to identification of ways on reduction of use of resources in production and consumption, and also on reduction of their impact on environment has a direct bearing on this concept.

Irrespective of initial approaches to "green economy" major importance for it has such integration of economic and environmental policy at which opportunities for new sources of economic growth are put in the forefront, without creating thus "unstable" load of quantity and quality of natural riches. All this assumes application of a wide set of measures, beginning from such economic tools as taxes, subsidies and schemes of trade, and also policy in the field of standard regulation, including establishment of standards and finishing with such not economic measures as voluntary approaches and providing information.

According to Bagrov, 2001 *the main difference of "green economy" from the previous economic theories is inclusion in market process of "the natural capital" and the attitude towards him as the self-made part of economy. "The green economy" transforms the relation to natural resources, forces not only to reconsider questions at issue of the relation of the nature and society, a view of a role of the person in the world, on its place in the nature, getting different coloring depending on regional specifics, provides economic progress and political stability by involvement of the nature in structure of the capital and productive forces* (Bagrov, 2001).

The transition purposes to "green economy" can differ in the different countries and depend on a national context. So, transition to "green economy" in Denmark can be connected with export of "green" technologies, the international image of the country, relevance of a subject for electorate.

And "the green five-year period" which is now realized in China probably is caused by requirements of improvement of a state of environment and problems of the international interaction. It is obvious that in the different countries there will be different state tools, mechanisms and a business environment of transition to "green economy". It is possible to distinguish the government procurements of production conforming to standards of efficiency of resources, ecological subsidies or taxes from the state tools; development of innovative sectors, in particular renewable power or "green", power effective construction. Cardinal differences can be between transitions to "green economy", respectively, and in Russia exporting oil, and in Germany, oil importing.

The "green economy" which appeared in the state documents of a number of the countries in the 2000th years is the, in fact, sustainable development put on "economic rails" which has to consider the following interests:

1. Strategic national interests: Ensuring energy security, modernization and introduction of new technologies, prevention of financial economic, ecological, social crises;
2. Interests of political and state: Administrative elite receiving support of electorate, opportunity for new forms of state-private interaction, legitimization at the international level;
3. Interests of the population: The welfare growth, the solution of environmental problems;
4. Interests of business: Introduction of new technologies, development of new sectors, new competitive opportunities.

One of the first realizations of model of the "green economy" providing a sustainable development of the country was started by Canada. In 1980 "The green plan" was developed. In the 1990th years in Canada there is popular an idea of providing a sustainable development at the local level, in the concrete sustainable communities.

South Korea is a traditional supporter of system of state planning. For South Korean model the significant role of the state in economic development of the country is characteristic. These traditions have the continuation in new conditions of resource and ecological crisis. In 2008 the president of South Korea proclaimed a new "green" course of development of the country. In January 2009 the government of South Korea accepted the program of measures for ensuring "green" growth of economy, and "The presidential Commission on green growth" which developed the five-year plan of "green" growth was formed. "The Low Carbon and Green Growth Act" created conditions for such growth which part was a policy of primary stimulation of investments into "green" projects (Transition to a sustainable development, 2002).

In July 2009 the program was expanded due to adoption of the five-year development plan of "green economy" divided into three main units including 50 projects. 44.3 billion dollars are allocated for measures for fight against climate changes and ensuring power independence. It is expected that realization of model of "green economy" will lead to increase in production on 140-160 billion dollars and will provide creation more than 1.5 million workplaces (Transition to a sustainable development, 2002).

The Republic of Kazakhstan in 2013 approved the Concept on transition of the country to "green economy" (Concept) (The concept on transition, 2013).

It should be noted that sustainable economic development of any country according to the developed canons of the economic theory is based on four factors: human capital, natural resources, investment resources and technologies. Analyzing the first three factors of economic growth in the Republic of Kazakhstan, it is possible to tell that for years of sovereign

functioning, enormous activity of the state and enterprise structures in the direction of their development is carried out.

The Republic of Kazakhstan according to "Strategy-Kazakhstan 2050", continues a new stage of reforming of economy and providing the fourth factor of sustainable economic development of the country technology.

In structure of technology the fourth factor of sustainable economic development, include science, engineering art, management, business. The main property of technology is its constant mobility. It, in fact, the continuous process of scientific and engineering activity, a continuous flow of inventions and technological changes leading to labor productivity growth. In general the activity directed on technical progress for the purpose of labor productivity increase is called innovative activity. The main motive of this activity is that growth of labor productivity under all other equal conditions, leads to decrease in costs of a unit of production that by all means provides the additional income, covering initial expenses. It also is a formula of efficiency of innovative development of economy. Depending on innovation level profitability can be various. Here the economy is considered as innovative in the conditions of its environmental friendliness. Thus, it is possible to speak about an Eco innovation.

Therefore, the problem of innovative development of economy has to be considered in a complex. On the one hand it has to be eco-friendly, with another, Eco innovative and with the third steady. All this will provide social and economic efficiency of economy. As is in economic circulation not only the physical capital, the capital intellectual, but also natural I rolled, the modern economic theory should be revised in the direction of development of the theory of "green economy".

According to the Concept, *"the green economy" is one of important instruments of providing a sustainable development of the country. Transition to "green economy" will allow Kazakhstan to provide achievement of a goal on entry into number of 30 most developed countries of the world. By calculations, by 2050 transformations within "green economy" will allow to increase in addition GDP by 3%, to create more than 500 thousand new workplaces, to create new industries and services sectors, to provide everywhere the high quality standards of life for the population* (The concept on transition, 2013).

The realization of the Concept on transition of the Republic of Kazakhstan to "green economy" it is planned to enable in three stages:

1. 2013-2020: During this period the main priority of the state is optimization of use of resources and increase of efficiency of nature protection activity, and also creation of "green" infrastructure;
2. 2020-2030: On the basis of the created "green" infrastructure transformation of the national economy focused on careful use of water, encouragement and stimulation of development and widespread introduction of technologies of renewable power, and also construction of constructions on the basis of high standards of energy efficiency;
3. 2030-2050: Transition of national economy to the principles so-called "the third industrial revolution", the demanding uses of natural resources on condition of their renewability and stability.

The state in connection with implementation of economic transformations within "green economy" is faced by a task to balance game conditions for "green" production by refusal of granting outdated subsidies, by reforming of policy and creation of new incentives, strengthening of infrastructure of the market and market mechanisms, the redirection of the state investments and transition to green government procurements. And the private sector is faced by a task to realize and use the original opportunities given by transition to "green economy" in a number of

key sectors and also to react to reforming of policy and price signals by increase in the amounts of financing and investment.

One of ultimate goals of the concept of "green economy" is preservation and restoration of the natural capital which demands a wide complex of actions: restructuring of many sectors of economy, investments into pure technologies and human capital, expansion of participation of the state and private partners, solution of the problem of subsidies, expansion of the international cooperation.

Key advantage of the concept of "green economy" is that it drew the international attention and concentrated global efforts on transformation of the available unstable economic model in such which would coincide with main objectives of continuous development better. It is important to note that cumulative efforts rendered assistance to development of the principles of "green economy" and "the green growth", and also political tools and a complex of actions which can be accepted by the national governments for the purpose of transition to steadier economic system.

CONCLUSION

The conducted research allows making the following conclusions:

1. Researches of transition to "green economy" indicate relevance and priority of this problem around the world. Together with it, the "green economy" promotes the reform which is carried out in Kazakhstan.
2. The "green economy" assumes a sustainable development of the state which increases welfare of people and society in general. Besides, the sustainable development before - believes complex measures for protection and rational use of all components of the biosphere.
3. The "green economy" will develop alternative and renewables and by that will result in power efficiency and will reduce needs for electricity generation.
4. The "green economy" promotes economic progress and will provide growth of an internal gross product, increase in the income of the country, creation of workplaces for the population, reducing thus an unemployment indicator in the country.
5. Transition to "green economy" reduces risks from global threats, such as climate change, exhaustion of minerals and deficiency of water resources.

Thus, transition to a green economy will not only have positive economic consequences, but also environmental ones. The renewable energy sources utilization will reduce environmental pollution and contribute to a reduction in non-renewable resources utilization.

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