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THE FORMATION OF GREEN ECONOMY IN THE FRAMEWORK OF SUSTAINABLE ECONOMIC AND ENVIRONMENTAL DEVELOPMENT

Мақола мураккаб экологик вазиятдаги минтақада «яшил иқтисодиет»ни шакллантириш имкониятларини аниқлаш ва салоҳиятини баҳолашга бағишланади. Ушбу мақсадда институционал ва технологик даражада «яшил иқтисодиет»га ўтишнинг Марказий Осиё давлатлари тажрибаси ва халқаро ташкилотлар ишланмалари ўрганиб чиқилган. Айниқса саноат тармоқларидаги таркибий ўзгаришлар нуқтаи назарида Қорақалпоғистон Республикасининг салоҳиятини баҳолашга катта урғў берилган. Шу билан бирга маҳаллий саноатнинг «яшил иқтисодиет» ни ташкил этувчиларни қулланилишига мослашиш имкониятлари очиб берилган.

Статья посвящается оценке потенциала и выявлению возможностей формирования «зеленой экономики» в регионе с напряженной экологической обстановкой. С этой целью был изучен опыт стран Центральной Азии, разработки международных организаций, регламентирующих процесс перехода к «зеленой экономике» на институциональном и технологическом уровнях. Особое внимание уделялось оценке потенциала Республики Каракалпакстан с позиции структурных изменений в отраслях промышленности. Выявлены возможности адаптации локальной индустрии к применению элементов «зеленой экономики».

Keywords: institutional changes, green economy, structural changes, the structure of industry, clusters of eco-industrial parks.

The increase of industrial consumption of raw materials and energy recourses has high impact on degradation of nature and getting worse it's quantitative and qualitative features.

In order to form green economy in Uzbekistan there were submitted Framework UNO Convention in 2006 which had claimed that Ministry of Economics of the Republic of Uzbekistan had been the National Department on Mechanism of clean development according to Kyoto protocol. The Ministry prepares and chooses projects appropriate to economic, environmental, technological and social interests of our country. Here economic, social and environmental criteria presence as national criteria of sustainable development [1].

Economic criteria include decreasing energy and material consumption per unit of processed product, increasing production and natural resources use efficiency via modern technologies and developing private sector. Environmental criteria consist of keeping safe the nature, minimization of resource use and waste, recycling. Social criteria are growth in employment and real income of population, working personnel treatment and widely informing population about rational use of resources.

The problem of green industries is mainly solved by improvement of technological processes and environmental activities, which is aimed to reduce environmental impact and raise the efficiency of rational and complex use of raw materials and resources. It is possible by modernization and reconstruction of enterprises, and introduction of environmentally friendly and resource-saving technologies.

This problem has high significance in ecologically strained regions, especially, in Karakalpakstan, where there is a huge need in mentioned activities and the impact of ecology on industry is observed, providing structural changes (table 1).

Table 1

Changes in structure of gross regional product, %*

№	Components	2003	2005	2007	2009	2011	2013
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1	industry	7,1	7,9	8,3	8,2	10,5	12,6
2	building	9,3	7,5	8,1	8,4	11,3	11,6
3	agriculture	28,1	28	27,1	21	22,7	20,8
4	trade and catering	8	6,3	6,1	6,6	8,6	9,2
5	transport and communication	18	14,7	6,1	7	18,2	13,4
6	taxes	7,4	5,1	4,2	5,8	5,9	4,7
7	others	22,1	30,5	40,1	53	22,8	27,7

*Source: State Committee of Statistics of the Republic of Karakalpakstan.

In recent years the share of agriculture has given its place to industry and non-manufacture branches, where flour, cereal and mixed feed industries dominate. The last one is caused by conditions to develop livestock industry. In whole a gradual growth is seen in branches of industry (due to adjustment of chemical and oil industries) and construction (the same). Also close branches are being involved into this stream increasing their shares. Here is an example of chemical products conducted by international project on Ustyurt in North of country. Serving project realization building, trade and catering have contributed significantly into gross regional product resent years making 11,6 % and 9,2 % respectively. So raw materials oriented structural changes takes place that is adapted to production base in the region.

There is unlimited discussion about ecological and economic scarcity of the region, still decision is incurred making difficult to sustain growth parameters.

The decision's qualitative and quantitative figures (features, indicators) transit in definite arrangements which make economic and ecological relations complicated and specific remarking institutional and technical sides of issue.

Differing from other regions in Karakalpakstan the difficulty of decision is toward the deepness of ecological problems, solution of which is mainly possible by economic measures and finance.

Akhmetshina in her research gives the hypothesis of linkage between sustainable development of ecosystem and regulation economic and ecological relations. As a consequence contrast between subjects and objects of economic and ecological

relations regulation in sustainable development was found out, the flexibility and mobility of regions in implementation the mechanism of economic and ecological relations management in sustainable development management system were noted [3, 18-20].

Measures on protect the environment do not carry out materialized outcome and in most cases is described in diminution ecosystem and housekeeping deterioration, improvement the quality of components of ecology and society.

Data on expenditures for nature protection measures (NPM) and rational resource consumption in the Republic of Karakalpakstan is illustrated in structural section for 2007-2012 years (table 2).

Table 2 presents the deviation of actual expenses on measures from planned ones ("+"-excess, "-" - shortfalls), the implementation of which has been funded with own means of enterprises and local funds for nature protection (LFNP).

Table 2

Figures on deviation between actual and planned expenditures on NPM*

	Resources	2006	2007	2008	2009	2010	2011	2012
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1.	land	0	+6,9	+0,3	-0,97	-81,7	-70,9	+217,2
2.	water	0	+5,7	-35,6	-5,9	+109,6	+420,8	+119,5
3.	atmosphere	-15,7	+4,2	+3,6	+21,1	+9,97	+6,3	-26,6
4.	flora and fauna	-	-	-	-32,8/-6,3*	-	-22,4	-

*Source: State Committee of nature protection of the Republic of Karakalpakstan.

In 2006 actual and planned volumes of funds on land and water resources' recovery match, however it is absent in the fields of flora and fauna. And approximately 87,5 % of funds, spent on recovery land resources, were born by capital investments, while 11,9 % - by own funds of enterprises and only 0,5 % - at the expense of LFNP. The measures on water resources recovery was funded from LFNP. According to the results of 2007 year LFNP continued investing into the improvement of land (3,21 %) in contradiction with the increase of contribution done by enterprises' funds reaching 96,78 %.

As it shown in table nature protection expenditures in fact exceed planned ones. Enormous efforts are concentrated in providing and cleaning water resources making changes to building and technologically new branches of local economy.

Notably is the fact that in subsequent years, enterprises on their behalf finance the measures for nature protection except measures on protection of fauna and flora, which have been funded mainly from LFNP. Consequently transition occurs in the process of investing from departments to economic agents.
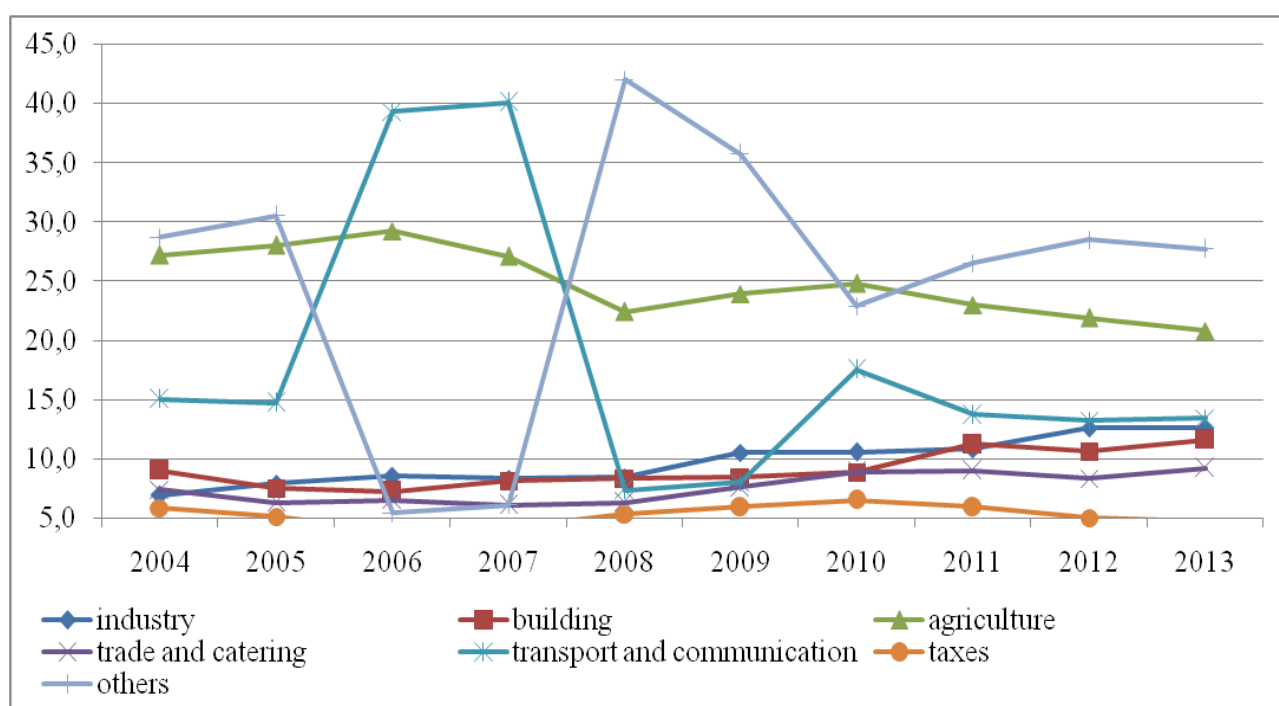
Also from data in table it is seen that forecasting perspective volume of investment in accordance with changes and plans for next future is difficult enough. And it results on secondary importance of issues on ecology in enterprises. The imperfection of existing mechanisms and methods for integrated analysis of economic and environmental numbers (figures) of industrial production in the enterprises' management system leads to under estimation of expense measure for efficient functioning, contradicting to fact that real sector of the economy does not

have enough finance and technical means leading to deterioration of nature decreasing manufactured goods' competitiveness.

On the other hand, private and government investments into resource protection differentiate in other countries. While in Moldova private investments are directed to building and exploitation and irrigation, Tajikistan and Georgia spend from both sources to biodiversity [5, 38-40].

Initiating expenses for NPM economic subject obliges financing and effect of realization. Consequently, working in economic and ecologically strained conditions, subjects are short in taking decision individually. Here large enterprises and state organizations have potential opportunities.

Analyzing the environmental outcomes' impact on the structure of industry of Karakalpakstan along with liquidation of some industries and birth of others it's possible to get followed graph (picture1).

Picture 1. Changes in structure of industry of the region.*
*Source: Ministry of Economy of the Republic of Karakalpakstan.

To some extent water flow reduction influenced on disappearance of fishing and related industries, agricultural production, and causing decline the North-Western districts' activity scope. As a compensatory effect the nomenclature of produced fuel the districts mine expanded and allocation of industries oriented on raw material availability. Thus a chemical plant was built; a gas-chemical complex is on last stage of completion, resulting on increase of petrochemical industry's share in gross output.

Therefore, the principle of "boomerang" plays its role here - in order to enrich the economic component the environmental imbalance occurs, which returns itself in form of costs.

The decision also is ambiguous to the extent that the relationships "nature-man" and "man-nature" are synonyms from economic point of view.

The Declaration "The Future We Want" [6] of sustainable development strategy, provided by United Nations Organization (UNO), puts some light into interrelated problems with aim constituting an economically and environmentally efficient "green" technologies' implementation.

Based on them a green economy contributes to growth natural capital or, at least, reduces environmental risk. In difference with traditional economy, which combines labor, technology and resources with products and emissions in the end, the green economy processes waste, consequently minimizing the impact on the resources supplier – environment. The last combines natural raw materials and human resources.

There is scarcity in covering with natural gas in some districts especially villages are short in gas in winter period. And as an alternative solution the usage of solar and bio-energy needs significant investments.

Scientists from Energy and Automation Institute of the Academy of Science of the Republic of Uzbekistan evaluated gross and technical energy potential of wind flow in bands of districts, among which Karakalpakstan has one of the highest positions in amount of technical potential energy letting decline energy use [2, 58-59].

Since our economy is largely based on local raw material sources, respectively, the role of green economy is getting important in structural change in separate industry as well as in whole economy.

The mechanism of structural changes is based on institutional, industrial and technological reforms in economy. In accordance with this, institutional reforms in terms of the transition to green economy include preparation of legislative and normative documents at state (laws, Government Programs on environment protection measures) and industrial enterprise (pollution controlling and regulating documents, instructions) levels.

Industrial changes are demonstrated in organization of production biologically and ecologically pure foods, construction materials and packaging materials. For example, dairy products production, processing agricultural products, use of natural raw materials in manufacture of wall and decorative materials, use of wood in production of food packages, etc.

New opportunities for processing Jerusalem artichoke, the use of information technology in medicine, education and communication, gradual implementation of counters and raw materials and energy resources dispensers in to material production and final consumption belong to technological changes in industry.

The world business Council's activity for sustainable development and its report-project "Vision 2050" [4, 120-141] have significant importance in the framework of green economy institutionalization. In the latter case business has great importance in balanced use of renewable resources and recycling. As long as private sector makes relatively more investment in NPM than the government does, activation of institutional levels in order to create a platform for small business and private sector in transition to green economy is advisable: starting with infrastructure and ending with technical designs.

At the same time it is necessary to coordinate efforts in customs, tax and credit sectors: terms, rates, conditions and tax base – all should response flexibly, including each district, city and area's features. Here the role of government as the main reformer in Uzbek model of transition to market economy should be noted. It is evident by the experience of Europe, particularly the UK and Germany and several countries in Central Asia, like China and South Korea. It is observed in the creation of special development bank institutes with attracting investment into the green economy purpose, and inclusion of development objectives of green economy in state national strategy program of socio-economic development.

Vision of above-mentioned and other changes in industrial sector is taking the form of clusters of eco-industrial parks over time that will make quality structural shift in many spheres of activity. The experience of many countries shows such clusters suit enough to the concept, that says coordinated management of resource flows in material and non-material production due to reduction of costs and saving the quality of environment is available. Subsequently the structural shift will impact on employment, technological structure, investment and environment, provide qualitative and quantitative changes in the structure of gross production and consumption.

Concluding ideas about creation and developing the green economy in structural changes to take place in local industry, several measures following may be offered:

-to train specialists in the field of technical and applied science, in particular not allow narrow specialties in ecology and prepare personnel skilled in combined ecology and technology, ecology and economy fields, etc.;

-deep processing of vegetable and livestock products taking into account specifics and conjuncture of markets;

-to create an infrastructure-platform for the green economy and gradually transform to green technologies within the industry. Adaptation of imported equipments to local conditions or import substitution due to local environmental and social specifics;

-active diversification of production of export products according to external markets' conjuncture as the "adaptation" strategy, and simultaneous organization of production of products with high competitiveness and, at least, stable demand in markets.

In a line with those there is a need for ecological appropriate of figures of economic development and improvement in ecological "competitiveness" against technological decisions.

The formation of sustainable development indicators is integrated and expensive process which needs amounts of information and efforts. There are two approaches here: to create integrated and aggregated indicators for judging the level of social-economic sustainability and separated indicators system for each aspect of sustainable development.

Unfortunately there is not generally acknowledged indicator for assessment of sustainable development transition efficiency. In connection with this to form the system of indicators is becoming necessary. Lots of figures make taking decision on level of sustainability difficult. It needs to range indicators by priority. The same way

was chosen by many international organizations and countries due to forming system of indicators.

It is preferable to cover ecological problems by economy or link them: ecological solutions should lead to economic effects in society. Thereby ecological and economic indicators with economic sense are advisable.

There are some wide using ecological and economic indicators: energy efficiency, coefficient of renewed assets, atmosphere waste per gross domestic product, hard waste from permanent (stationary) sources, water waste per gross domestic product, amount of non-used and harmful toxic waste, square of protected areas, greenhouse gas and so on. This list can be fulfilled via singling out "economic effects and sustainable development" problem. In this case on macroeconomic level gross domestic product and real savings may be included into the system.

Along with this, the notion of sustainable development, announced at the meeting of UNESCO which was held in Paris in 2002, considers a transition from the problem of environment protect at the expense of economic growth to the problem of ensuring simultaneous economic development and preservation of the natural resources.

On the whole, there is high necessary to determine optimal economic actions in order to diminish ecological impact in ecologically tensioned regions as well as in bordered ones and to be able to forecast changes in the ecological system. The resolution of these and other linked problems is possible with a complex approach to the situation. It implies ecologically sustainable development instead of economic development with one side decision. Taking into account long term dependence of the green economy structural changes in branches, institutional performance and technology of industry and close spheres of economy are suggested.

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