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GREEN ECONOMY STRATEGY IN KURGAN REGION

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Abstract

To ensure the growth of the green economy, it is important to reduce investments in environmentally unpopular industries, introduce efficient and cheaper technologies, comply with environmental standards, increase funding of green industries, and regulate tax rates and payments. The purpose of the study is to highlight the main principles and determine the prospects for the development of the green economy in Kurgan Region. In Russia, the Ecology national project is aimed at the effective management of production and consumption waste; drastic reduction of the level of air pollution in large entities of the country; quality improvement of drinking water for the population; ecological recovery of water bodies; conservation of biological diversity. In 2018, in order to meet the objectives of the Ecology project, the Project Committee of Kurgan Region adopted four regional projects: Integrated System of Solid Municipal Waste Management; Clean water; Conservation of forests; Preservation of unique water bodies. The study utilized the following sources of information: official statistics, materials from periodicals, regulatory documents on the topic of the study. Research methods: economic and statistical, monographic, balancing method and related techniques. The paper defines the main goal of the green economy – to increase the environmental sustainability of the territory of Kurgan Region, analyzes the modern environmental situation in the region, and reveals the problem of solid municipal waste management. Special attention is paid to the prevention of violations of mandatory requirements in the field of environmental protection.

Keywords: Green economy, development prospects, Kurgan Region

1. Introduction

The economy that does not affect nature is called the "green economy". It supports the conservation of resources, reduces the burden on the ecosystem, contributes to the growth of natural capital, and improves the well-being of the society. The green economy needs to strike a balance between economy, environment and social policy (Merino-Saum et al., 2020; Prudnikova & Mudretsov, 2020; Tarkhanova et al., 2020).

One of the key areas of the economy is the investment into the green economy (What is the Green Economy, 2021). These are primarily the renewable energy sources, water supply, agriculture, waste.

2. Problem Statement

Among the constituent entities of the Ural Federal District, Kurgan Region is characterized by the smallest amount of pollutant emissions into the atmosphere and dirty discharge into water bodies. Therefore, in terms of discharges and emissions of pollutants and waste generation the environmental situation in Kurgan Region is considered stable, relatively favourable compared to other regions (Table 1).

Table 1. Indicators characterizing the impact of economic activity on environment and natural resources of Kurgan Region (Kurgan Region in numbers, 2021)

Indicator	2016	2017	2018	2019	2020
Wastewater discharged into surface water bodies, mln m^3	38.1	38.1	33.3	31.9	x
including polluted	38.0	36.2	33.2	31.8	x
Emissions of pollutants into the air from stationary sources, thousand tons	41.7	43.8	38.8	45.4	39.4
including without purification	38.1	41.7	38.1	44.4	38.4
Production and consumption waste generated, thousand tons	1505.6	1009.9	1441.2	366.2	X

In 2019, it was discharged less contaminated wastewater was discharged into surface water bodies than in 2016 (by 6.2 mln m^3).

Emissions of pollutants into the air from stationary sources in 2020 decreased by 4.4 thousand tons or 5.5% during the study period. However, the emission rate without purification, although insignificant, increased during the study period.

It was generated less production and consumption waste in 2019 compared to 2016 by 1139.4 thousand tons or by 75.7%.

According to the state audit conclusions, despite the positive aspects the level of waste processing in Russia as a whole does not exceed 7%. More than 90% of waste is buried in landfills, many of which do not comply with standards and have a negative impact on the environment. At the same time, the situation with official landfills is close to critical, since in 32 regions their capacities will be exhausted until 2024, and in 17 of them – until 2022. At the same time, most regions have no opportunities to create new landfills. According to the report, one of these dysfunctional territories was Kurgan Region (The joint venture reported the failure of the national project "Ecology" in the Kurgan Region, 2021).

Kurgan Region was among the regions with a dysfunctional state of municipal solid waste (MSW) management. All existing landfills for waste disposal in the region will be filled completely in two years. According to the regional scheme for MSW management, starting in 2023 only one landfill will operate in the region, which is planned to be expanded and equipped with garbage sorting facilities (The joint venture reported the failure of the national project "Ecology" in the Kurgan Region, 2021).

Thus, today part of the sewage treatment facilities in the region does not provide sewage treatment in accordance with modern regulatory requirements and there is a need for modern municipal solid waste management facilities.

A new infrastructure is needed in this situation. There is also a need to determine the sources of funding. Consequently, there is a problem of fulfilling certain tasks of the Ecology project in Kurgan Region.

3. Research Questions

The analysis of the existing environmental situation indicates the need to improve the environmental situation in Kurgan Region. Every year the region surveys the state of water protection zones in the prefreshet period. The survey data show unsatisfactory coastal conditions. This is, first of all, their littering. This situation deteriorates water quality, stimulates pollution of bottom sediments, and the death of bioresources. From these perspectives it is necessary to exclude the ingress of household and construction waste, manure, petroleum products and other pollutants from water protection zones into water bodies.

The current costs for environmental protection in the last five-year period increased by RUB 513.9 mln (or 74.4%) and amounted to RUB 1204.8 mln in 2020 (Table 2).

Table 2. Indicators characterizing the impact of economic activity on environment and natural resources of Kurgan Region (Kurgan Region in numbers, 2021)

Indicator	2016	2017	2018	2019	2020
Current (operating) costs for environmental protection (in actual prices), mln rub.	690.9	699.9	779.5	894.9	1204.8
Index of physical volume of nature protection costs (in comparable prices), as a percentage over the previous year	92.5	108.5	103.1	140.8	x
Investments in fixed assets aimed at environmental protection and rational use of natural resources (in actual prices), mln rubles.	52.0	147.3	195.9	462.5	332.1
including for the protection of water resources	13.0	117.9	108.4	330.6	260.7

Investments in fixed assets aimed at environmental protection and rational use of natural resources increased significantly in 2020 – 6.4 times. However, compared to the previous year, the decrease amounted to 130.4 million rubles. Most of the investments in 2020 were aimed at protecting water resources – 78.5%.

Motor vehicles in Kurgan Region are gradually switching to the use of more environmentally friendly gas engine fuel. In December 2019, out of the total number of buses carrying passengers through Kurgan city routes the share of buses operating on methane amounted to 88.1%, which is 7.8% more compared to the previous year (Volodina, 2021). This fact undoubtedly contributes to the reduction of atmospheric air pollution by transport.

The region concluded agreements on cooperation in the implementation of measures aimed at reducing the negative impact on the environment between the Department of Natural Resources and Environmental Protection of Kurgan Region, the Ural Interregional Directorate of Rosprirodnadzor and thirteen major economic entities of the region. These include Kurganmashzavod OJSC, Dalur JSC, Vodny Soyuz JSC and others. In 2019, these organizations implemented more than 110 environmental measures for a total of 185.9 million rubles (Volodina, 2021).

4. Purpose of the Study

The purpose of the study is to highlight the main principles, determine the goal and prospects for the development of the green economy in Kurgan Region.

5. Research Methods

The study utilized the following sources of information: official statistics on the socio-economic situation in Kurgan Region for 2016-2020; periodicals; programs to prevent violations of mandatory requirements in the field of environmental protection and protection of the population and territories from natural and man-made emergencies in Kurgan Region for 2021-2023.

Research methods: economic and statistical, monographic, balancing.

6. Findings

The authors highlight the following basic principles of the green economy:
- limitations. The natural resources of the land are limited;
- reuse of resources. Reuse of resources (recycling, garbage sorting, etc.) should be encouraged;
- savings. Everyone must save resources (e.g. energy, water, etc.);
- accessibility. Everyone should have access to resources (e.g. energy, water, etc.);
- liability. There should be liability for pollution of nature (for example, fines for harmful emissions);
- compliance with environmental standards. The economy must comply with standards that protect nature;
- investment. Investment in nature is needed;
- restoration. Investments in nature restoration are needed;
- protection. It is necessary to protect biological and environmental systems.

Therefore, at present, the main goal of the green economy is to increase the environmental sustainability of the territory of Kurgan Region.

At the same time, the main tasks are as follows:
- protection of water resources and air;
- reconstruction and development of green areas of the region;
- organization of environmental events;
- prevention of violations of mandatory environmental requirements;
- waste management in the region;

- organization of environmental safety measures;
- preservation of biological resources of the region;
- investments in the green economy;
- preservation of forests of Kurgan Region.

To increase funding, it is necessary to take part in investment programs, attract private investments, and use the experience of neighboring regions. Today, the issue of attracting funds from the federal budget and extrabudgetary investments to create infrastructure facilities for the management of municipal solid waste seems quite relevant.

The sustainable development of agriculture in the region is facilitated by the use of new tillage technologies, the cultivation of new crops, further automation of labor-intensive processes, public-private partnership, use of scientific achievements (Karpov et al., 2021; Roznina et al., 2021). The introduction of planning, budgeting, budget control systems in business entities remains equally relevant (Butyugina & Gorbunova, 2021; Nikulina, 2020; Nikulina et al., 2019).

One of the main tasks of the green economy is to prevent violations of mandatory requirements. For example, the most frequent violations in the field of waste management are the following:

- unauthorized waste disposal;
- absence of certificates for I-IV hazard class waste;
- lack of accounting for waste management;
- absence of an approved industrial environmental control program;
- lack of environmental control;
- failure to report on the results of environmental control to the relevant authorities.

On December 18, 2020, Order No. 560 "On Approval of Programs for the Prevention of Violations of Mandatory Requirements in the Field of Environmental Protection and Protection of the Population and Territories from Natural and Man-Made Emergencies in Kurgan Region for 2021-2023" was issued. This order approved, inter alia, the Program for the Prevention of Violations of Mandatory Requirements in the Field of Waste Management for 2021-2023.

The objectives of preventive measures are as follows:

- managing risks of damage to values;
- improving the transparency of activities of the Department of Natural Resources and Environmental Protection with regard to the analyzed area;
- motivating for conscientious behavior;
- eliminating violations of mandatory requirements prior to inspections, etc.

The preventive measures will make it possible to solve the following problems:

- reduction of the number of violations of mandatory requirements;
- creation of a common understanding of mandatory requirements for all participants in control and supervision activities;
- reduction of the administrative burden on business entities.

The target performance indicators of *the Program for the Prevention of Violation of Mandatory Requirements* are shown in Table 3.

Table 3. Target performance indicators of the Program for Prevention of Violation of Mandatory Requirements, %

Indicator	2021	2022	2023
Share: number of eliminated violations; preventive measures carried out during the reporting period; preventive measures in the total amount of violations identified by the results of supervisory measures	3% increase over the previous year	5% increase over the previous year	10% increase over the previous year

The percentage of violations eliminated; percentage of preventive measures carried out during the reporting period; the percentage of preventive measures in the total amount of violations identified by the results of supervisory measures increases within the Program from 3% in 2021 compared to the previous year to 10% in 2023.

7. Conclusion

Thus, the authors identified the main prospects for the development of the green economy in the region: reduction of air, water, soil pollution; rise in the efficiency of production in green industries; reduction of violations of mandatory requirements; life quality improvement of the population; prevention activities; planning and formulation of budget indicators in accordance with strategic goals and objectives; reduction of the risk of emergencies.

References

Butyugina, A., & Gorbunova, E. (2021). Improvement of budgeting subsystem in agriculture of the AdeptIS: Agrocomplex configuration. *E3S Web of Conferences, 254*, 10013. https://doi.org/10.1051/e3sconf/202125410013

Karpov, G. G., Porsev, I. N., Karpova, M. V., Roznina, N. V., Lapina, E. N., & Poverenova, E. M. (2021). Efficiency of cultivation of oil flax varieties in the conditions of the southern Trans-Urals. *IOP Conference Series: Earth and Environmental Science, 659*(1), 012125. https://doi.org/10.1088/1755-1315/659/1/012125

Kurgan Region in numbers. (2021). Kurgan, Sverdlovskstat.

Merino-Saum, A., Wyss, R., Baldi, M. G., & Clement, J. (2020). Unpacking the Green Economy concept: A quantitative analysis of 140 definitions. *Journal of Cleaner Production*, *242,* 118339. Kurgan Region in numbers. 10.1016/j.jclepro.2019.118339

Nikulina, S. N. (2020). Controlling in the System of Budgeting in an Organization. *Advances in Economics, Business and Management Research*, *147,* 253-256.

Nikulina, S. N., Butyugina, A. A., & Gorbunova, E. E. (2019). Investment activity in conditions of automation use of budgeting system. *IOP Conference Series: Earth and Environmental Science, 341.* https://doi.org/10.1088/1755-1315/341/1/012217

Prudnikova, A. A., & Mudretsov, A. F. (2020). "Green economy" as a driver of sustainable development. *Economics and Mathematical methods*, *56(2),* 32-39. https://doi.org/10.31857/S042473880009220-1

Roznina, N., Karpova, M., Shulgina, A., Borovinskikh, V., & Volkova, A. (2021). The Role of Economic Science in Ensuring Sustainable Development of Agriculture. *Agricultural development of the Kurgan Region in modern conditions 10001 Published online.* https://doi.org/10.1051/e3sconf/202125410001

The joint venture reported the failure of the national project "Ecology" in the Kurgan Region. (2021). The region faces a garbage collapse by 2022. Natural landfills are expected to increase in the subject. https://pravdaurfo.ru/articles/193260

Tarkhanova, E. A., Fricler, A. V., & Chizhevskaya, E. L. (2020). Green economy in Russia: The investments' review, indicators of growth and development prospects. *Entrepreneurship and Sustainability Issues*, *8*(2), 649-661. https://doi.org/10.9770/jesi.2020.8.2(39)

Volodina, A. (2021). *Ecological portrait of the Trans-Urals.* https://kikonline.ru/2020/03/13/jekologicheskij-portret-zauralja /

What is the Green Economy. (2021). https://invlab.ru/ekonomika/chto-takoe-zelenaya-ekonomika