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Policy and Institutional Review of Biodiversity Finance in Kazakhstan

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ABBREVIATIONS AND ACRONYMS

ESG	Environmental, Social, Governance
PR	Public Relations
GR	Government Relations
JSC	Joint Stock Company
AP RK	Administration of the President of the Republic of Kazakhstan
AMS	Automated Monitoring System
BIOFIN	Biodiversity Finance Initiative
GDP	Gross Domestic Product
RES	Renewable Energy Sources
WHO	World Health Organization
BCC	Budget Classification Code
GBF	Kunming- Montreal Global Biodiversity Framework
MIA RK	Ministry of Internal Affairs of the Republic of Kazakhstan
MWRI RK	Ministry of Water Resources and Irrigation of the Republic of Kazakhstan
MH RK	Ministry of Health of the Republic of Kazakhstan
MFA RK	Ministry of Foreign Affairs of the Republic of Kazakhstan
MCI RK	Ministry of Culture and Information of the Republic of Kazakhstan
MSHE RK	Ministry of Science and Higher Education of the Republic of Kazakhstan
MNE RK	Ministry of National Economy of the Republic of Kazakhstan
MD RK	Ministry of Defense of the Republic of Kazakhstan
ME RK	Ministry of Education of the Republic of Kazakhstan
MIC RK	Ministry of Industry and Construction of the Republic of Kazakhstan
MA RK	Ministry of Agriculture of the Republic of Kazakhstan
MT RK	Ministry of Transport of the Republic of Kazakhstan
MTI RK	Ministry of Trade and Integration of the Republic of Kazakhstan
MTS RK	Ministry of Tourism and Sports of the Republic of Kazakhstan
MLSPP RK	Ministry of Labor and Social Protection of the Population of the Republic of Kazakhstan
MF RK	Ministry of Finance of the Republic of Kazakhstan
MDDIAI RK	Ministry of Digital Development, Innovations and Aerospace Industry of the Republic of Kazakhstan
MES RK	Ministry of Emergency Situations of the Republic of Kazakhstan
MENR RK	Ministry of Ecology and Natural Resources of the Republic of Kazakhstan
MEN RK	Ministry of Energy of the Republic of Kazakhstan
MJ RK	Ministry of Justice of the Republic of Kazakhstan
BAT	Best Available Technology
NGO	Non-Governmental Organization
OSCE	Organization for Security and Co-operation in Europe
UN	United Nations
SPNA	Specially Protected Natural Area
UNDP	United Nations Development Programme
RK	Republic of Kazakhstan
MM	Mass Media
USA	United States of America
CHPP	Combined Heat and Power Plant
SDGs	Sustainable Development Goals
EVES	Economic Valuation of Ecosystem Services

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EXECUTIVE SUMMARY

This report provides a comprehensive analysis of Kazakhstan's biodiversity policy, institutional framework, and financial mechanisms, evaluating their effectiveness and alignment with international conservation efforts. Kazakhstan's diverse ecological landscape, spanning from expansive steppes to mountainous ecosystems, requires robust legal and financial measures to ensure the sustainable conservation of biodiversity. While notable progress has been made in environmental legislation, significant challenges remain, particularly in expanding funding sources, integrating biodiversity into strategic planning, and strengthening enforcement mechanisms.

The National Biodiversity Conservation Strategy of Kazakhstan is still under development and awaiting approval. The overall direction of state environmental policy in this regard is promising, with genuine efforts to prevent biodiversity loss and promote conservation. However, biodiversity considerations are not consistently integrated into national planning processes and are often subordinated to economic development priorities.

Recent legislative reforms, rising environmental awareness, and the adoption of ESG principles in the financial sector have contributed to biodiversity conservation. Despite these advancements, economic interests frequently take precedence over environmental concerns, resulting in continued biodiversity degradation. Key threats include infrastructure expansion, agriculture, and mining. Additionally, institutional barriers – such as the formal rather than substantive enforcement of environmental impact assessments – undermine the effectiveness of biodiversity protection policies.

Public funding for biodiversity remains insufficient, with irregular budget allocations and a lack of financial incentives for conservation initiatives. Strengthening financial sustainability requires the integration of mechanisms such as payments for ecosystem services, green bonds, and biodiversity offsets. The gradual adoption of ESG standards in Kazakhstan's financial sector offers an opportunity to direct investments toward biodiversity-friendly projects.

To achieve meaningful progress, the country must finalize and implement a National Biodiversity Strategy that provides a legally binding framework for integrating conservation efforts into national development plans. This strategy should align with the Kunming-Montreal Global Biodiversity Framework (GBF) and address both policy gaps and financial mechanisms to ensure long-term biodiversity protection.

Institutional and financial support for biodiversity conservation must be reinforced by increasing budget allocations, strengthening the role of strategic environmental assessments in infrastructure and industrial projects, and establishing an independent biodiversity monitoring body to enhance compliance and accountability.

Kazakhstan has made strides in biodiversity conservation, yet significant gaps remain in policy implementation, financial sustainability, and institutional capacity. Addressing these challenges requires a stronger commitment to biodiversity financing, greater integration of conservation priorities into national development strategies, and enhanced cross-sectoral cooperation. This report underscores the urgent need for a well-structured, adequately funded, and transparent approach to biodiversity governance to safeguard Kazakhstan's ecological heritage for future generations.

The key recommendations resulting from the analysis can be summarized as follows:

Kazakhstan lacks a national biodiversity strategy and does not integrate biodiversity goals into high-level planning, which hinders progress. A clear, updated definition of biodiversity should be introduced into the Environmental Code, along with stronger legal tools for monitoring, protection, and compensation. Biodiversity considerations must be embedded across all national strategies, even in unexpected sectors. A dedicated interministerial project office should be established under the Ministry of Ecology and Natural Resources. Funding mechanisms need reform to eliminate perverse incentives, and institutional awareness must be improved to support effective planning and budgeting.

INTRODUCTION

As a component of a large and multi-faceted effort to improve biodiversity financing mechanisms, political and institutional analysis serves as the "environment" (e.g., favorable or unfavorable) in which everything related to biodiversity exists and develops – from factors leading to its degradation to sources of its funding.

Just as chemical analysis of lake water can identify all factors affecting the flora and fauna inhabiting it, political and institutional analysis can reveal the root causes of the current status quo regarding biodiversity in a particular country. It allows for the assessment of the effectiveness of biodiversity conservation measures and, in particular, provides the opportunity to develop medium- and long-term plans for improving biodiversity financing mechanisms.

The document you are holding is intended to provide you with comprehensive and precise information on the development and evolution of the political, legal, and institutional environment for biodiversity conservation and financing in the Republic of Kazakhstan from 2015 to 2023.

The institutional environment in Kazakhstan, much like Kazakhstan's extreme continental climate, presents significant challenges to biodiversity conservation and sustainable development. However, ongoing political transformations, rapid environmental legislative reforms, and increasing civil engagement are creating numerous new growth opportunities and opportunities for a transformational improvement in biodiversity conservation.

In this document, we aim to provide an in-depth overview of this environment, presenting its strengths and weaknesses, opportunities and threats. Most importantly, we have sought to uncover the underlying logic of the political and institutional landscape as it relates to biodiversity. We hope that with these insights, our colleagues, biodiversity experts, and all who are interested in this topic will find valuable guidance, enabling them to anticipate project risks, select the most effective approaches, and achieve their goals in financing biodiversity conservation efforts and sustainable development initiatives.

I. ANALYSIS OF NATIONAL BIODIVERSITY STRATEGIES, SUSTAINABLE DEVELOPMENT STRATEGIES AND THEIR ECONOMIC INTERCONNECTIONS

National strategies serve as foundational and system-forming elements for implementing state policy across all areas of the country's life, including issues of biodiversity and sustainable development. The period under consideration, from 2015 to 2023, is marked by fundamental changes both in the state planning system and directly in the high-level government policy.

The new State Planning System in the Republic of Kazakhstan was approved on 29 April 2024. Understanding the spirit and ideology behind these changes is essential for the continued development and implementation of the goals and objectives of the Biodiversity Finance Initiative (BIOFIN) in the Republic of Kazakhstan.

The State Planning System is a set of interrelated mechanisms, processes and participants in state planning that ensure the development of the country for the long and medium term. In simple terms, this foundation critically determines the further construction of the "house," with the entire architectural design directly depending on it. Similarly, the conservation and sustainable development of biodiversity, as well as its financing, can only be as effective as they are integrated within the institutional framework of the state planning system.

The structure of the State Planning System can be outlined as follows:

Other documents not included in the State Planning System: concepts, national projects, state programs, doctrines (strategies), comprehensive plans, National Infrastructure Plan.

Development plans: government agencies, regions, cities of republican significance and the capital, national companies

National Security Strategy of the Republic of Kazakhstan, National Security Risk Management Action Plan

The National Development Plan of the Republic of Kazakhstan sets out the goals, main directions, development priorities, approaches to their implementation, and key national indicators for the relevant planning period. It is aimed at achieving the country's long-term development guidelines

The "Kazakhstan-2050 Strategy", the Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan until 2060, and the United Nations Sustainable Development Goals (SDGs)

A comprehensive analysis of this set of documents, which constitutes the state planning system of Kazakhstan, will allow us to determine the current state of biodiversity financing and target medium- and long-term objectives in this direction.

1. National Biodiversity Plans and other biodiversity policy documents

First of all, it is necessary to note and that there is no current legal act that can be identified as a national plan for the conservation of biodiversity. Other documents of a strategic nature, having individual elements aimed at preserving biodiversity, cannot claim to be a national plan in the sense as it is considered in the BIOFIN Methodology.

In 2018, the Committee for Forestry and Wildlife of the Ministry of Ecology and Natural Resources of Kazakhstan, with the support of the United Nations Development Programme, developed the *Concept for the Conservation and Sustainable Use of Biodiversity until 2030*. However, due to the above-mentioned transformation processes within Kazakhstan's state planning system – particularly the development of the national project *"Zhasyl Kazakhstan"* (*or Green Kazakhstan*) – the review of this Concept was temporarily suspended. According to the Committee for Forestry and Wildlife, the finalization of this Concept is expected by the end of 2024.

It is important to emphasize that the Government of Kazakhstan did not approve the National Strategy and Action Plan for the Conservation and Balanced Use of Biodiversity back in 1999, i.e. the question has remained open for the past 25 years.

Under certain conditions, the National Project "Zhasyl Kazakhstan", approved by the Decree of the Government of the Republic of Kazakhstan on 12 October 2021 under No. 731, can be considered as a valid national plan for the conservation of biodiversity.

A detailed analysis of the entire array of strategic planning documents of the Republic of Kazakhstan through the lens of biodiversity is presented below. We believe it is crucial to thoroughly highlight the connections between strategic planning documents and the topic of biodiversity, as in our view, many fundamental opportunities and constraints stem from these documents.

The analysis presented here is intended to highlight key aspects for further review and evaluation. For ease of understanding, a detailed analysis is provided in a separate Appendix. Below, the information is presented in a concise and accessible format, excluding documents with repetitive conclusions and those with no significant impact on biodiversity.

Table 1 - National strategic documents important for biodiversity

Document	What is important for us in this document from a biodiversity perspective?
Strategy "Kazakhstan-2050": a new political course for an established state	Preservation of biodiversity is neither directly nor indirectly designated as a strategically significant, existential task of the state. Without changing this status quo, it seems difficult to fully change the paradigm of thinking within the state apparatus and public institutions.

Document	What is important for us in this document from a biodiversity perspective?
Concept for the transition of the Republic of Kazakhstan to a "green economy" and National project "Green Kazakhstan"	At the moment, these are two key documents directly related to the topic of biodiversity conservation. It seems necessary to revise the Concept and the National Project to specify strategic goals and objectives specifying strategic goals and objectives, approaches to the conservation of biodiversity.
Concept of development of the tourism industry of the Republic of Kazakhstan for 2023–2029	Tourism has a close relationship with biodiversity, both as one of the negative factors (mass tourism leads to the loss of biodiversity) and as a factor contributing to the conservation of biodiversity through ecotourism. It seems necessary to make a radical transition of the entire tourism industry to the principles of sustainable tourism with increased requirements for the implementation of ecotourism in protected areas and lands for recreational purposes.
Concept for the development of creative industries for 2021–2025	The document does not provide a direct link between creative industries and biodiversity conservation. At the same time, there is an expert hypothesis that some creative industries promoting the environmental («green») agenda can have a significant impact on increasing public awareness of biodiversity issues in Kazakhstan. For example, the production of souvenirs can be closely intertwined with the topic of preserving biodiversity (for instance, releasing souvenirs featuring images of endangered animal species in Kazakhstan).
Concept of development of the geological industry of the Republic of Kazakhstan for 2023–2027	We consider it critically important to emphasize attention on this document. Put very simply and straightforwardly, geology often acts as a starting point for the degradation or even destruction of biodiversity: • Both government and private sectors invest significant resources in geological exploration; • This triggers a mechanism for seeking returns on these investments and covering the incurred costs; • Geological studies then reveal deposits of valuable minerals. Geologists, however, are not guided by concerns for biodiversity risks: their task is to identify the most economically viable deposits; • This initiates further investments in obtaining mining rights and constructing extraction and processing facilities; • Only after these steps are completed does the project team hire environmental experts to conduct an environmental impact assessment, which includes analyzing biodiversity impacts. By this stage, with substantial government and private investments already committed, halting the project becomes nearly impossible, even if it poses severe consequences for biodiversity. In our view, developing mechanisms to assess risks at the earliest stages of geological exploration could prevent many subsequent issues and disputes.

Document	What is important for us in this document from a biodiversity perspective?
Concept of development of rural areas of the Republic of Kazakhstan for 2023–2027	In this document, we would like to draw attention to the fundamental error of the document's developers in substituting the concepts of "rural areas" and "agriculture". This document should have a separate section devoted to the issue of biodiversity, and funding for biodiversity conservation should be integrated into rural development issues.
Concept of cultural policy of the Republic of Kazakhstan for 2023–2029	This document serves as a vivid example of how a topic seemingly unrelated to biodiversity can have a significant impact on it. In our view, culture, in the broadest sense of the word, acts as a kind of 'cement' in the 'foundation' of a healthy biodiversity. Please refer to the examples provided in the Appendix, which include a detailed analysis.
Concepts for the development of transport and logistics potential of the Republic of Kazakhstan until 2030	This document has a significant impact on biodiversity in light of the construction and reconstruction of roads and railways. It seems necessary to include in the document very specific mechanisms for minimizing the negative impact on biodiversity during and as a result of road construction. It is very important that this document provides funds (funding is included) for the proposed measures to preserve biodiversity (for example, for scientific development, for piloting and scaling up special overpasses for animals over highways).
Concept of development of the electric power industry of the Republic of Kazakhstan for 2023–2029	This document also creates significant risks for the conservation of biodiversity. It seems necessary to include in the document very specific mechanisms for minimizing the negative impact on biodiversity. Please see the examples provided in the Appendix for the expanded text of the analysis.
Concept for the development of housing and communal infrastructure for 2023–2029	In this paper we have attempted to demonstrate how increased civil engineering can indirectly increase pressure on ecosystems and lead to loss of biodiversity. Please see the examples provided in the Appendix for the expanded text of the analysis.
Concept of migration policy of the Republic of Kazakhstan for 2023–2027	In this paper, it is important to draw attention to how migration flows impact biodiversity.

2. Overview of the Role of Biodiversity in Sustainable Development Planning

One of the most concise definitions of sustainable development planning systems is given in the Guide to preparing a National Sustainable Development Strategy, adopted following the International Forum of the same name in 2002 in Accra, Ghana: a coordinated, broadly participatory, and iterative process of conceptualizing and implementing practical actions aimed at addressing economic, environmental, and social challenges through balanced and comprehensive measures.

Despite the diversity of approaches to sustainable development planning, a guiding framework and a kind of "coordinate system" can be provided by the system of global indicators developed by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators. As widely known, the 17 Sustainable Development Goals (SDG) were adopted by all UN Member States in 2015.

Kazakhstan has nationalized the global SDG indicators, and as of today, the monitoring system includes 280 indicators, of which 205 are global and 75 are national indicators. In 2022, Kazakhstan published its second Voluntary National Review on SDG implementation.

It is important to note the information on financing specific goals from the state budget. Ensuring sustainable development greatly depends on the coherence of the state planning system with budgetary processes. According to aggregated results across all functional groups covering SDG tasks through budgetary programs, 46% (77 out of 167 national SDG tasks) are covered. However, one of the lowest compliance rates of budgetary programs with SDGs was identified for Goal 15 "Life on Land" (33%). Consequently, underfunding of these tasks leads to systemic deterioration in many aspects of state activities, directly and indirectly affecting biodiversity.

In our view, the roots of the current state of biodiversity lie in the foundations of the state planning system. Let's examine the role of biodiversity in sustainable development planning using a top-level document as an example. Unfortunately, similar approaches and trends are evident across all lower-level documents: a fundamental, institutional problem is carried over from one document to the next.

"Kazakhstan-2050" Strategy: a new political course of the established state the fundamental document on which all other strategic planning documents of the Republic of Kazakhstan are based or should be based.

First and foremost, it is important to note that the "Kazakhstan-2050" Strategy does not contain the term "biological diversity"; however, it implicitly addresses concepts that comprise this term's meaning.

From a sustainable development perspective, this Strategy identifies ten global challenges of the 21st century, which everyone "*must take into account … if [the country] plans to continue to achieve new successes in its development*".

Table 2 - Theses and Quotes from the "Kazakhstan-2050" Strategy

Theses and quotes from the "Kazakhstan-2050" Strategy	**Interpretation from a biodiversity perspective**
High rates of global population growth are contributing to a global shortage of food. Today, millions of people are starving; nearly one million people face constant food shortages. Without revolutionary changes in food production, these figures will only continue to rise. This global food shortage presents a great opportunity for Kazakhstan. We can be part of the solution to this international challenge. We are already among the top grain exporters in the world. We possess vast "green" territories that are capable of producing eco-friendly foodstuffs. To make this great leap forward in farm production we will need a new approach in our state.	The pressure on biodiversity from the agricultural sector is predicted to increase significantly, as the state plans to exploit all biodiversity resources for their transformation into agricultural products that will be exported to various countries around the world. In fact, Kazakhstan is implementing and planning to increase the export of natural capital, an integral part of which is biodiversity.
Water remains a limited resource and competition for it is becoming a critical geopolitical factor, causing tensions and conflicts worldwide. Kazakhstan faces an acute water supply issue. High-quality drinking water is scarce. A number of regions face shortages of drinking water. There is a geopolitical aspect to this issue. We are already facing a serious issue of trans-boundary river use.	This part of the Strategy is entirely dedicated to addressing issues related to one component of natural capital, which underpins biodiversity. This suggests that, although fragmented, the state is focusing attention on the systemic risks associated with biodiversity.
The era of the hydrocarbon economy is coming to an end. We face the beginning of a new era where human activities will rely less on oil and gas, and more on renewable energy sources. Kazakhstan is one of the key elements of global energy security. Having world-class oil and gas reserves, our country will not depart from its policy of reliable strategic partnerships and mutually beneficial international cooperation in the energy sector.	This quote from the Strategy illustrates the state's strategic approach to biodiversity management: It acknowledges global trends aimed at reducing negative human impacts on biodiversity. It declares the intention to follow these global trends, though without specifying the paths to achieve these goals. Contradicting the first two points, the status quo is not only maintained but reinforced. Biodiversity continues to serve as a source of income extraction without consideration of long-term consequences, as strategic interests are often sidelined in favor of short-term gains.

Theses and quotes from the "Kazakhstan-2050" Strategy	Interpretation from a biodiversity perspective
The unprecedented growth in global population and consumption, and the finite level of natural resources, will bring both positive and negative outcomes. Kazakhstan has a number of advantages in this regard. We have been blessed with abundant natural resources and other countries will need to rely on us for their resource needs. It is critical that we reconsider our attitude to our natural wealth. We need to learn how to properly manage it, saving our export revenues and, most importantly, transforming our natural resources into an efficient and sustainable vehicle for economic growth.	The key message of the Strategy remains a certain enormity of reserves of natural capital and, in particular, biodiversity. Government policy is focused on "managing" the consumption of natural capital and biodiversity as its integral element, rather than on preserving natural capital and biodiversity.
One of the greatest problems in the world today is increasing social instability. Its root cause is social inequality. Therefore one of the key issues on our agenda is social security and social stability. It is important that we strengthen our social stability.	The acute socio-economic and political crisis, expressed in the riots that took place in Kazakhstan in January 2022, showed the relevance of this challenge noted in the Strategy. Problems of social security and social stability, in our expert opinion, are a key limiting factor in solving problems of conservation and financing of biodiversity. Due to their specificity and severity, social issues automatically cancel or push into the distant future any initiatives in biodiversity financing.
Budgetary policy We must adopt new principles of budgeting policy. We must spend only within our means and reduce the deficit as much as possible. It is necessary to build up reserves for a rainy day, ensuring Kazakhstan's safety in the long run. The attitude towards budgeting processes must become as careful and thoughtful as it is for private investments. In other words, not a single tenge from the budget should be wasted. The budget of the state must be focused on long-term, productive national projects that include the diversification of the economy and development of infrastructure. Projects for investments must be selected in a strict manner, based on feasibility and rate of return. We must keep in mind that even the most modern projects become a burden to our budget if they require expenditures for maintenance, but do not bring revenues and do not solve the problems of our citizens.	This section of the Strategy, in our expert opinion, is key to the issue of financing biodiversity. Budget policy, according to this Strategy, and also taking into account the actual state of affairs, completely overlooks biodiversity. Budget policy has a purely utilitarian approach. Expenditure items that have a long-term effect, aimed at preserving biodiversity, and not at solving an emergency catastrophic situation, do not receive approval in the system of coordination and development of budgets. The existing budget policy paradigm excludes the possibility of conserving and financing biodiversity even at a minimally sufficient level. The current budget policy biodiversity-related budget allocations are limited to fragmented, politically driven, opportunistic, or reactive measures prompted by catastrophic event.

It can thus be stated that a fundamental problem with biodiversity financing exists, rooted in the paradigm of government thinking. All subsequent problems of financing biodiversity are just a consequence of this fundamental problem and a flaw in the architecture of the state planning system.

A particular applied significance lies in the formalized procedure that obliges government bodies to consider environmental interests, including biodiversity interests, when planning sustainable development across various economic sectors. Therefore, full consideration of biodiversity interests, issues, and tasks in the development of state policies in different areas of state activity has become legally mandatory from January 1, 2024.

This refers to the procedure for assessing environmental risks when adopting strategic documents that affect entire industries or regions of the country. In the Environmental Code of the Republic of Kazakhstan, adopted on January 2, 2021, this procedure is referred to as Strategic Environmental Assessment.

Strategic Environmental Assessment covers state programs, territorial development programs, master plans of settlements (hereinafter referred to as Documents) whose implementation may have significant environmental impacts, as well as changes and/or additions made to existing Documents.

Documents aimed at developing agriculture, forestry, fisheries, energy, industry (including exploration and extraction of minerals), transportation, waste management, water management, telecommunications, tourism, urban and rural development planning, land use, and conservation are subject to mandatory Strategic Environmental Assessment.

Strategic Environmental Assessment consists of the following stages:

1) Determining the need for Strategic Environmental Assessment based on criteria established by this Code, including cases specified in the Environmental Code, based on the results of Document impact screening;

2) Defining the scope of the Strategic Environmental Assessment report;

3) Preparation of the Strategic Environmental Assessment report;

4) Quality assessment of the Strategic Environmental Assessment report;

5) Reviewing the Document project before its approval to ensure compliance with the Strategic Environmental Assessment report;

6) Monitoring the significant environmental impacts of the Document.

The responsibility for ensuring the conduct of Strategic Environmental Assessment lies with the state body responsible for developing the Document.

In theory, strict compliance with the requirements of the Environmental Code regarding Strategic Environmental Assessment should fundamentally change the role of biodiversity in overall sustainable development planning and in the planning of activities by state bodies.

However, the weakest link in conducting Strategic Environmental Assessment is the involvement of independent experts in the risk analysis of the Documents being adopted. It seems expedient to apply the experience of conducting scientific anti-corruption expertise of regulatory legal acts in this matter.

For conducting anti-corruption expertise, independent lawyer-experts who meet the qualification requirements and have passed a qualification exam (test) were selected. In 2020, 2,4 billion tenge was allocated from the state budget to pay for expert services. The approximate cost of expertise for one legal act was about 400,000 tenge (slightly less than US$1,000 at the 2024 exchange rate).

Engaging ecologist experts on a pro bono basis for conducting Strategic Environmental Assessment, alongside the approval of the methodology for such expertise, with a separate focus on biodiversity, would make a significant contribution to solving the country's environmental problems and, including preventing decisions and actions leading to biodiversity loss

For a deeper understanding of the role of biodiversity in sustainable development planning, key sectors of the economy are considered according to the classification of the Bureau of National Statistics of Kazakhstan.

Table 3 - Analysis of key economic sectors of the Republic of Kazakhstan

Criteria	Description
Sector	**Agriculture, forestry and fisheries**
GDP	3,096,720.2 million tenge
Job	1.1125 million people
Foreign currency revenue	US$3.7 billion
Dependence	Overall, the sector directly exploits components of biodiversity for net profit. Increasing agricultural productivity depends on various factors: - availability of water resources. The main water consumer is agriculture (up to 80%). The efficiency of water use in agriculture is extremely low, primarily due to the use of outdated irrigation methods and inefficient farming practices. - condition of irrigated lands. Almost a third of agricultural land is now degraded or under serious threat, - the state of pastures, which suffer from overgrazing near settlements and undergrazing in remote areas has led to the degradation of pastures.

Impact	As part of the concept for the transition of the Republic of Kazakhstan to a "green" economy in agriculture, Kazakhstan plans to adhere to six principles of "green" agriculture, which will ensure the development of the sector and at the same time will preserve and improve the environment: 1) prevention of land degradation and restoration of degraded lands; 2) preventing further overgrazing of pastures; 3) efficient use of water; 4) rational use of resources; 5) waste minimization and reuse; 6) carbon dioxide capture. Accordingly, these six principles reflect the negative impact of this economic sector on biodiversity. Acute environmental problems associated with the use of land resources in agriculture remain problems associated with water and wind erosion of soils and overrunning of pastures, which causes deterioration in the living conditions of the population, changes in the ecological state of soils, and a decrease in the quality of agricultural products. The loss of pastures is expressed in the loss of valuable forage plant species from the grass stand and their replacement by weeds, inedible and annual species. The main causes of agricultural land degradation are soil erosion and deflation. Erosion occurs from improper land use, excessive grazing of livestock, improper agricultural technology, destruction of grass and forest vegetation. Forestry has a more balanced impact on biodiversity. Thus, in certain cases, as shown by the situation with the moratorium on deforestation, the absence of deforestation had a more negative impact than the presence of deforestation. Failure to carry out sanitary felling ultimately led to deterioration of forests and even loss of biodiversity due to various consequences. Fisheries, with the exception of artificial fish farming, are a direct threat to biodiversity. The state has not yet developed effective tools to combat poaching.

Criteria	**Description**
Sector	**Mining and quarrying**
GDP	10,222,736.0 million tenge
Job	280.7 thousand people
Foreign currency revenue	US$10.5 billion
Dependence	This sector is less dependent on biodiversity, which in turn acts as a demotivating factor in the issue of biodiversity conservation when implementing projects in this area.

Impact	This sector has the strongest negative impact on all components of biodiversity. In fact, this sector of the economy is a "locomotive" (in a negative sense) of the destruction of biodiversity. An urgent environmental problem in the republic is pollution of the natural environment with oil and its products. Soil pollution with oil and oil products causes almost complete depression of the functional activity of soil microflora. The physicochemical properties of the soil change, the water-air regime worsens, and the structure of biocenoses changes. All this generally leads to an imbalance in ecosystems and negatively affects all links of the ecological chain: soil layer, surface and groundwater, geological environment. According to Kazakh experts, plans to expand production on the shelf of the Caspian Sea (development of the Kashagan field) "could lead to the destruction of untouched ecosystems over vast territories with unclear environmental consequences not only for the country, but also for the unique biodiversity of the Caspian Sea: populations of sturgeon, birds, seals and etc."

Criteria	**Description**
Sector	**Manufacturing industry**
GDP	9,445,182.7 million tenge
Job	589.4 thousand people
Foreign currency revenue	US$15.4 billion
Dependence	One of the highest rates of fresh water withdrawal occurs in the manufacturing industry. Otherwise, this industry, like the mining sector, is conditionally independent of biodiversity.
Impact	One of the main industries that generate hazardous waste is the manufacturing industry. Industrial wastewater is often discharged directly into rivers or municipal sewer systems. According to the Concept for the Development of the Manufacturing Industry of the Republic of Kazakhstan for 2023-2029. The issues of transition to a "green economy" are becoming increasingly important, since the increase in environmental problems – air, land, water pollution – is already having a negative impact on the climate and human health. Decisions are being made everywhere to abandon industries that cause great harm to the environment, and penalties for non-use of treatment facilities and equipment are increasing. The cross-border carbon tax introduced by the EU is on the global agenda. This will affect domestic producers of ferrous and non-ferrous metals, cement, fertilizer and other goods.

Criteria	**Description**
Sector	**Supply of electricity, gas, steam, hot water and air conditioning**
GDP	1,126,172.6
Job	149.9 thousand people
Foreign currency revenue	No reliable data is available, as Kazakhstan both exports and imports electricity.
Dependence	With the exception of dependence on water resources, this area is less dependent on biodiversity.

Impact	Impacts on biodiversity include: - emissions of pollutants into the atmosphere; - emissions of greenhouse gases into the atmosphere (CO_2); - impact on water bodies due to water consumption and wastewater discharge; - disposal of production waste. According to the Concept for the development of the electric power industry of the Republic of Kazakhstan for 2023-2029, the development of the industry is based on the principle of environmental friendliness of the operation of energy sources in the light of the transition of the Republic of Kazakhstan to a green economy, the creation of conditions and the introduction of environmental and economic mechanisms for fulfilling environmental obligations in the electric power industry to stimulate the use of the best available techniques and attracting investments.

Criteria	Description
Sector	**Water supply; collection, processing and disposal of waste, pollution control activities**
GDP	202,443.6 million tenge
Job	85.1 thousand people
Foreign currency revenue	There is no accurate information, since Kazakhstan practically does not export water resources.
Dependence	According to statistical data, over the past 15 years, the volume of fresh water intake in the Republic of Kazakhstan has increased by more than 10% and amounted to 22.102 million m^3 in 2017. Transportation losses on average account for about 60% of the volume of water consumption for agricultural consumers; about 40% for industrial consumers and 50% for utilities.
Impact	This sector, due to existing systemic problems, has a long-term negative impact on biodiversity, one of the basis of which is water resources.

Criteria	Description
Sector	**Construction**
GDP	4,022,367.3 million tenge
Job	648.4 thousand people
Foreign currency revenue	There is no reliable data, since Kazakhstan practically does not export construction services.
Dependence	The dependence of construction on biodiversity is significant, but very indirect. For example, loss of biodiversity and critical deterioration of biodiversity components ultimately reduces the demand for construction in a given region.

Impact	One of the anthropogenic factors leading to the emergence and development of desertification processes in Kazakhstan is the construction and operation of industrial, military and civil facilities, irrigation and linear structures. Construction of roads, sports, entertainment complexes and other facilities that increase the disturbance factor and affect the reproduction of animals.

Criteria	Description
Sector	**Wholesale and retail trade; car and motorcycle repair**
GDP	11,906,846.5 million tenge
Job	1,507.3 thousand people
Foreign currency revenue	Foreign currency revenue is formed from the aggregate of Foreign currency revenue from other sectors of the economy
Dependence	The dependence of trade on biodiversity is significant but very indirect. For example, loss of biodiversity and critical deterioration of biodiversity components ultimately reduce trade volumes in a given region.
Impact	Trade has indirect negative impacts on biodiversity. A conditional example would be the growth in demand for a certain category of goods in the sale of which plastic is used. Ultimately, this waste plastic pollutes the environment and leads to loss of biodiversity. In this sense, trade acts as a "compass" for other areas of activity, indirectly contributing to biodiversity loss.

Criteria	Description
Sector	**Transportation and warehousing**
GDP	4,137,576.2 million tenge
Job	648.5 thousand people
Foreign currency revenue	This sector generates Foreign currency revenue to a lesser extent.
Dependence	A lack of funding and shortcomings in the planning of routine and capital repairs can lead to man-induced emergencies, which in turn may cause significant damage to biodiversity.
Impact	Construction of roads, bridges, airports and other transportation facilities leads to the loss of natural ecosystems and habitat destruction. Transport is a source of environmental pollution. Harmful substances from mobile vehicles enter the air via exhaust gases, fuel system fumes, refueling, and crankcase gases.

Criteria	Description
Sector	**Providing accommodation and food services**
GDP	577,627.4 million tenge
Job	215.9 thousand people
Foreign currency revenue	There is no reliable data
Dependence	The success of this sector is directly dependent on the state of biodiversity. Areas with relatively "untouched" components of biodiversity attract more tourists.
Impact	This sector entails a flow of tourists, which has a strong negative anthropogenic impact on most components of biodiversity.

Criteria	Description
Sector	**Information and communication**
GDP	1,507,394.6 million tenge
Job	181.2 thousand people
Foreign currency revenue	There is no reliable data
Dependence	This area is not directly dependent on biodiversity.
Impact	The use of modern communication technologies and information systems can facilitate the collection of data on the state of ecosystems, species populations and other parameters of biodiversity. These data can be used to develop effective management and conservation strategies. Effective public communication can influence public opinion and support for conservation initiatives. This may include educational activities, information campaigns and public involvement in decision-making processes.

Criteria	Description
Sector	**Financial and insurance business**
GDP	2,837,540.5 million tenge
Job	198.1 thousand people
Foreign currency revenue	This sector does not directly generate Foreign currency revenue.
Dependence	Due to the active implementation of ESG principles in the activities of financial institutions, the activities of organizations in this sector are beginning to pay more attention to the impact of the projects they finance on biodiversity. Thus, the deterioration of biodiversity is gradually affecting this sector negatively.
Impact	Some financial institutions actively support sustainable development projects, including projects aimed at preserving biodiversity and natural ecosystems. Insurance activities are aimed at economic incentives for preventing environmental damage. Focusing the financial sector on ESG principles has comprehensive and long-term benefits for biodiversity.

3. Collection of available data on the economic value of nature and its contribution to sustainable development

The main, if not the only, source of systematic information on the state of biodiversity in Kazakhstan is the National Report on Biodiversity Conservation in Kazakhstan, prepared in accordance with the Reporting Guidelines developed by the Secretariat of the Convention on Biological Diversity. The sixth National Report was published in 2018.

In addition, the Environmental Performance Review of Kazakhstan, regularly conducted under the auspices of the UNECE, is a valuable source of information on the state of biodiversity. The third review was published in 2019.

According to the Committee on Statistics, total annual government expenditures (current expenditures and investment costs) on biodiversity conservation in Kazakhstan fluctuated significantly, from 467 million tenge to 1.6 billion tenge, for the period 2010–2016. Kazakhstan's investments in biodiversity conservation increased from 169 million tenge (US$1.15 million) in 2010 to 461 million tenge (US$2.08 million) in 2016.

Economic assessment of ecosystem services (EAES) was carried out in 2 protected areas in Kazakhstan. In 2013, 6 ecosystem services with a total value of more than 86 million US dollars were assessed in the Karkaraly State National Nature Reserve. In 2016, in a state natural reserve Ile-Balkhash EAES was carried out according to 2 scenarios, the baseline and sustainable development scenario. The total value of the 11 ecosystem services under the baseline scenario was approximately US$26 million.

The environmental legislation of Kazakhstan currently does not contain standards for taking into account the value of biological resources when assessing the impact on the environment, feasibility studies of large investment projects, and does not provide for mechanisms for compensating for negative impacts. This gap is one of the key factors in the unsustainable use of biological resources.

In this aspect, it seems promising to study the implementation of paragraph 3 of Article 6 of the Constitution of the Republic of Kazakhstan, which states that "*The land and its subsoil, water, flora and fauna, and other natural resources belong to the people. On behalf of the people, property rights are exercised by the state*."

As a rule, in a market economy, assets are always subject to valuation and accounting. Biodiversity, as a major asset owned by the people, still remains unvalued and unaccounted for in political and economic decisions by the state, which exercises property rights on behalf of the people. **A legal assessment of the issue of infringement of the constitutional rights of an unlimited number of persons or all citizens of the Republic of Kazakhstan may have a certain perspective: the state, as a "trust manager", without assessing the components of biodiversity, deprives the owner (the people) of the opportunity to understand the benefits and losses from the "trust management" carried out by the state since gaining Independence.**

Let's analyze the key environmental and economic evidence using the structure recommended in Box 3.4 from the BIOFIN 2018 Workbook.

Table 4 - Key Ecological and Economic Evidence

Report information	Sixth national report of the Republic of Kazakhstan on biological diversity. Published in 2018. Authors: ME RK (the authorized body in the field of environmental protection at that time), with the assistance of UNDP experts.
What sectors, impacts and/ or dependencies, biodiversity or ecosystem services were included?	The report covers all sectors of the economy, as well as all existing and sufficiently researched aspects of biodiversity and ecosystem services.
What was the original state of the environment and the direction and extent of change?	The initial state of the environment at the time of development of the Sixth National Report was in a dynamic state, characterized by the following trends: - adoption of legislative and other formal measures to preserve the environment and biodiversity; - actual deterioration of the environment due to anthropogenic impact and climate change; - fragmented adoption of measures for the conservation and restoration of biodiversity along with the continuation of the actual negative impact of state economic policy on biodiversity.
What methodology or assessment approach was used?	The report has been prepared in accordance with the Reporting Guidelines developed by the Secretariat of the Convention on Biological Diversity.
Whose values were measured, where and over what period of time?	In section 3 of the report, when selecting indicators for assessing the performance of national targets, indicators recommended by decision XIII/28 of the thirteenth meeting of the Conference of the Parties to the Convention on Biological Diversity were used. This recommendation identifies both general and specific indicators. General indicators identify those aspects that can be monitored, while specific indicators refer to those operational indicators that can be used to monitor changing trends. The table includes only those indicators that are available at the time of preparation of the report or are under active development. To assess the effectiveness of national objectives, national indicators are presented in tabular form that correspond to the specified recommendations and are monitored by national monitoring systems in Kazakhstan. Covered the period is from 2013 to 2017.
What were the main findings? Was the research result used to promote policy reforms and were those reforms successful?	An assessment of the effectiveness of completing each of the Aichi tasks is given. Unfortunately, biodiversity reports do not become the basis for policy reforms. For example, the Fifth National Report, published in 2014, states that "... in Kazakhstan, the development of a new National Biodiversity Conservation Strategy is currently being finalized... The Strategy should be ready for approval in June 2014." However, as of 2024, the Strategy is still in the same state of "close readiness for approval", i.e. not approved.
Do the results offer opportunities for improving biodiversity finance solutions?	No, the Report does not contain actionable recommendations or conclusions that would improve biodiversity financing.

To determine the economic value of nature, it is expedient to use approaches from the Natural Capital Protocol. Natural capital refers to stocks of renewable and non-renewable resources (plants, animals, air, water, soil, minerals) that provide a flow of goods and services to people: food, water, energy, housing, medicine, and raw materials for products. It also provides clean air, flood protection, climate regulation, pollination, and recreation – benefits derived from well-functioning ecosystems.

Assessing the total natural capital of Kazakhstan appears to be sufficiently theoretical and subjectively evaluative. A more objective and reliable task is assessing the economic value of key components of Kazakhstan's natural capital.

Thus, one of the most common economic indicators is Gross Domestic Product (GDP). GDP, obtained by the income method, determines its structure based on primary incomes: wages of employees, net taxes on production and imports, profits, and mixed income

We can make a simplified assumption that GDP reflects a part of the 'dynamic' value obtained by enterprises and society from the use of resource flows. We use the conditional term 'dynamic value' to demonstrate the 'static value' of clean air, protection against natural disasters arising from the imbalance of natural components usage, favorable climate conditions, and many other manifestations of optimally functioning ecosystems.

At the time of writing this document, Kazakhstan's GDP is approximately US$225 billion. Let's try to consider the economic value of individual significant components of nature in comparison with the GDP volume, while not forgetting that GDP is a fairly ephemeral sum of income from economic entities of the country. For objectivity, we will also reflect the comparison of the components of nature themselves.

'Pollination of plants': undoubtedly, an important component of nature is the process of plant pollination, which is almost 100% related to biodiversity status. For the purposes of our study, the value of plant pollination vividly demonstrates the relationship between biodiversity and the economy.

Pollination is a key process for maintaining biodiversity in natural ecosystems. Many plants, including wild species, depend on bees. Bees transfer pollen between plants, facilitating pollination and ensuring new generations of plants. A reduction in bee population can disrupt this process and lead to a decrease in plant diversity in natural ecosystems. This can have far-reaching consequences for other organisms that depend on these plants for food and habitat.

Let's try to assess the value of plant pollination within the fruit and berry production sector of agriculture. According to data presented in the Senate of the Parliament of the Republic of Kazakhstan in 2022, the country produces 420 thousand tons of fruits and berries annually. To assess the volume of production in monetary terms, let's refer to export data – the export of fruits and berries in January-July 2023, totalling 34.9 thousand tons, brought in US$11.2 million. Thus, the total value of fruits and berries produced in Kazakhstan per year is US$134 million, assuming 100% of the volume was exported. For objectivity, the domestic value of produced goods can be estimated at US$100 million, since the export price is inherently higher than the domestic market value.

Ultimately, it can be concluded that the economic value of plant pollination solely in the fruit and berry segment (i.e., excluding many other agricultural crops dependent on pollination) is at least US$100 million per year, or about 0.05% of Kazakhstan's GDP.

Currently, scientists and experts are observing a critical decline in bee populations. In addition to diseases, the use of various pesticides in agricultural crop treatment has a detrimental effect on bee populations.

'Clean air': A good assessment of the economic value of clean air is provided by the Institute of Economic Research of Kazakhstan, on whose research we will rely. From 2015 to 2019, there was a steady increase in emissions of pollutants from 2,180,000 tons to 2,483,200 tons. From 2019 to 2022, there has been a decrease in emissions to 2,314.8 thousand tons.

In 2022, out of the total volume of emitted pollutants into the atmospheric air, 1,868.5 thousand tons (80.7%) were gaseous and liquid substances, and 446.3 thousand tons (19.3%) were solids. Gaseous and liquid substances mainly consisted of sulfur dioxide (SO_2) – 44.0%, carbon monoxide (CO) – 24.0%, nitrogen oxides (calculated as NO_2) – 16.7%.

According to the Bureau of National Statistics of the Republic of Kazakhstan ASPR RK, in 2022, specific pollutants such as lead and its compounds (213.4 tons), manganese and its compounds (73.9 tons), copper oxide (103.1 tons), sulfuric acid (382.2 tons), chlorine (53.8 tons), and mercury (264 kilograms) were introduced into the air basin of the country. At the same time, the actual emissions of these substances did not exceed the established maximum allowable emissions.

The main volumes of pollutants were generated in the Pavlodar (724.2 thousand tons) and Karaganda (469 thousand tons) regions. Together, these two regions accounted for 51.5% of the total volume of pollutant emissions in the country.

According to WHO estimates for 2019, the age-standardized mortality rate from air pollution in households and atmospheric air in Kazakhstan was 83.4 deaths per 100,000 population, significantly higher than the average for the WHO European Region (44.5 deaths per 100,000 population).

According to World Bank estimates, **air pollution annually causes more than 10,000 premature deaths in Kazakhstan and costs the country's economy more than US$10.5 billion.** In most cases, diseases and premature mortality associated with poor air quality are due to winter smog and, in particular, high concentrations of PM2.5.

In the "World Air Quality Report for 2022", based on the average annual concentration of PM2.5 (μg/m³), Kazakhstan with a level of 23 μg/m³ (exceeding the WHO recommended level by more than 4 times) ranks 40th in air pollution (1st place – worst indicator).

Currently, WHO recommends an annual PM2.5 concentration of 5 μg/m³. In most populated areas of Kazakhstan, the indicators significantly exceed the WHO recommended limit. The highest indicators for 2022 were observed in the cities of Karaganda (180 μg/m³) and Taldykorgan (100 μg/m³).

Thus, the economic value of clean air is at least US$10.5 billion per year, or about 4.4% of Kazakhstan's GDP. This amount becomes more vivid and understandable if we compare it with the following component.

'Mineral resources': Key groups of mineral resources for Kazakhstan's economy are the oil and gas sector and the mining and metallurgical sector. The share of the oil and gas sector in GDP is about 20% – approximately US$45 billion, and the share of the mining and metallurgical sector in GDP is about 10% – approximately US$22.5 billion. Moreover, the oil and gas sector forms 44% of Kazakhstan's state budget.

Income from oil and gas exports amounts to over US$50 billion per year, while exports from the mining and metallurgical sector bring in more than US$12 billion per year. These amounts undoubtedly depend heavily on market conditions.

Thus, Kazakhstan's economy loses as much or even more (if indirect factors are taken into account) due to polluted air as it earns from exporting the entire volume of the mining and metallurgical sector's production! However, it should be noted that human life is priceless and cannot be measured in monetary terms, and the above estimate by the World Bank on economic losses due to high population mortality has a very conditional nature.

Here we wanted to show how the deterioration of one of the components of natural capital nullifies all the achievements and successes of entire economic sectors.

'Water': According to the MWRI RK, there are a total of 102.3 cubic kilometers of water in Kazakhstan, 54% of which is formed within the republic's territory, and the remaining 46% comes from neighboring countries. Annual consumption by economic sectors amounts to about 25 cubic kilometers of water, of which 65% is directed to agriculture and 25% to industrial needs.

At the same time, there are significant problems with the quality of available water resources. This issue is monitored by the state organization 'Kazhydromet,' which provided the following data for 2021:

'Out of 107 water bodies that were checked, 40 rivers and reservoirs were classified as having the worst water quality classes. Of these, 33 objects from the worst category have such a high level of pollution that the water of these rivers and reservoirs is unsuitable for any type of water use. These include 27 rivers in the Atyrau, Aktobe, Kostanay, Karaganda, Zhambyl, Kostanay, Akmola, and Turkestan regions, as well as six reservoirs in the northern and southern regions of the country.'

Thus, an objective assessment of Kazakhstan's water resources is extremely difficult, given the high degree of pollution of those water bodies that were analyzed, while a large part of such objects still has not been covered by research.

The economic value of drinking water, unfortunately, still does not receive proper assessment. A vivid example can be the situation surrounding the Kokzhide underground water field in the Aktobe region of Kazakhstan. The reserves of this field amount to about 1.5 billion cubic meters of water, sufficient for supplying four large cities with water.

However, five subsoil users operate within the contour of the Kokzhide field. According to the results of an environmental study conducted in 2019, annual contamination of underground water with oil was detected. In 2022, the concentration of substances containing oil at the Kokzhide field exceeded permissible standards six times.

At an average tariff for water supply services in Kazakhstan amounting to 137.29 tenge per cubic meter without VAT, the economic value of the Kokzhide field amounts to more than 205 billion tenge or approximately US$456 million.

The total conditional value of all water resources in Kazakhstan, using the above-mentioned tariff, may amount to more than 14 trillion tenge or approximately US$31 billion, which is approximately 14% of the country's GDP.

Moreover, it should be noted that the state and society cannot exist without water resources, and from this perspective, the total reserves of all water resources in the country undoubtedly exceed the country's GDP.

Summarizing the examples above, we can draw the following conclusions:

- economic value of nature is undoubtedly multiple times greater than the country's GDP.
- assessment of the economic value of natural components, including the health of biodiversity, is highly conditional and can be applied, for example, to compare the benefits and costs of implementing both individual industrial projects and entire economic sectors.
- more in-depth study of the economic value of biodiversity helps to create prerequisites and favorable conditions for improving funding for conservation and sustainable development of biodiversity, for making political decisions that benefit biodiversity.

II. IDENTIFYING IMPORTANT TRENDS AND DRIVERS OF BIODIVERSITY CHANGE

4. Identifying key positive and negative trends in biodiversity

Next, key positive and negative trends in the field of biodiversity are developed, which are documented or reflected in documents that can be recognized as a trusted source of information.

Table 5 - Main Positive Trends in Biodiversity

No.	Main positive trends	Comment, link to document
1	Implementation of the concept of "biodiversity" into the conceptual apparatus of the legislation of the Republic of Kazakhstan. Securing key guarantees for the conservation of biodiversity.	This became possible as the result of to the adoption of the new Environmental Code of the Republic of Kazakhstan on January 2, 2021 and the inclusion in it of an array of standards for the conservation of biodiversity and ecosystem services.
2	Formal and real development of environmental culture among all segments of the population, with an emphasis on the younger generation. In this way, risks to biodiversity are systematically and long-term reduced.	The objectives of fostering environmental culture are reflected in the Concept for the development of preschool, secondary, technical and vocational education of the Republic of Kazakhstan for 2023 – 2029, approved by Decree of the Government of the Republic of Kazakhstan dated March 28, 2023 No. 249.
3	Simplifying access for the public, journalists and experts to information about planned activities that may have a negative impact on biodiversity. Raising public awareness.	The authorized body for environmental protection (at that time the Ministry of Ecology, Geology and Natural Resources), with the support of the OSCE Program Office in Astana, has created a Unified Environmental Portal http://ecoportal.kz with the heading "Public Hearings" and "Statement on Planned Activities."
4	Expanding the practice of using space monitoring to solve environmental problems. Systemically significant factors that negatively affect the state of biodiversity are identified.	JSC National Company Gharysh Sapary provides space monitoring services for the Committee for Environmental Regulation and Control of the MENR RK. In 2020, 8,884 landfills were identified, 5,823 were liquidated, in 2021 – 7,328, 6,740 were liquidated, in 2022 – 5,683, liquidated – 4,331. For 2022 alone, 149 officials were brought to administrative responsibility for violation of environmental requirements for the accumulation, collection, transportation, accounting and disposal of waste for a total amount of 16.4 million tenge. Space monitoring revealed 2,503 cases of illegal mining, including 77 new cases in 2023, 377 historical cases with area changes and 2,049 historical cases without area changes.
5	Prioritize issues related to water resources. Significant reduction in tolerance of society and government to violations related to water resources.	By order of the Prime Minister of the Republic of Kazakhstan dated March 9, 2022 No. 47-r, the Water Council of Kazakhstan was created. In 2023, the MWRI RK was created.

Table 6 - Main Negative Trends in Biodiversity

No.	Main negative trends	Comment, link to document
1	The predominance of the economic interests of individuals over the environmental interests of a wide range of individuals (the people), as a result of which the loss of biodiversity is allowed.	For example, the most resonant fact was the transfer of water fund lands in the city of Astana, which is a temporary habitat for various birds, a permanent habitat for flora and fauna inherent in wetlands. Only after public intervention, the court declared illegal and canceled the resolution of the Astana city akimat dated December 23, 2020 "On the transfer of water fund lands to the category of settlement lands" regarding the transfer of lake areas Nos. 6,7,9 to settlement lands. In the North Kazakhstan region, the Government, by its resolution of December 15, 2006 No. 1215, decided to transfer 270 hectares of the Petropavlovsk Forestry Institution from the forest fund to the category of lands of settlements. This has led to numerous cases of deforestation over large areas.
2	Lack of a national plan for biodiversity conservation.	The work on developing a strategic document for biodiversity conservation has been ongoing in Kazakhstan for quite some time. In 2023, a project funded by the Global Environment Facility (GEF) 'Global Biodiversity Frameworks: Supporting Early Action' was launched, aimed at assisting the Government of Kazakhstan in developing a national strategic document on biodiversity.
3	Underfunded and unsystematic government policies regarding biodiversity monitoring and scientific research in this area.	The availability of reliable, comprehensive and up-to-date information on biodiversity is a prerequisite for the proper formulation of national strategic documents, species action plans and protected area management plans, as well as for the establishment of hunting quotas. In addition, the information system "State Inventory of Natural Resources", which was created by the Department of Environmental Monitoring and Information of the ME RK, does not fully fulfill its intended functions as a policy support tool, since it is not updated with high-quality and updated data on the results of biodiversity monitoring, field inventory and research. The consistency of research on biodiversity issues (in particular, national long-term monitoring of biodiversity, inventories and research programs) was under serious threat due to recently adopted changes in the rules of state funding of scientific activities (lost in force by Decree of the Government of the Republic of Kazakhstan dated November 23, 2023 No. 1022) in accordance with government procurement procedures. As a result, a number of research programs and projects have already been suspended or completely terminated.

No.	Main negative trends	Comment, link to document
4	Underfunding and unsystematic government policy regarding the neutralization of significant or historical pollution that poisons the components of biodiversity.	An example of the Ilek River in the Aktobe region. In 2017, the maximum permissible concentration of boron in the reservoir, in the area closest to the sludge dumps, was exceeded 143 times. This is the legacy of the former Alga chemical plant, which until 1964 directly discharged contaminated industrial wastewater into Ilek. The total area of boron-contaminated groundwater, according to 2006 data, is 21.1 sq. km. In 2008, a project was being developed to clean up the Ilek River from boron and to study the area of pollution, but since 2012 no work has been carried out.
5	Conflict of interest in financing environmental impact assessments.	According to clause 3 of Article 72 of the Environmental Code of the Republic of Kazakhstan, the organization and financing of work on assessing the environmental impact and preparing a draft report on possible impacts is provided by the initiator at his own expense. This state of affairs leads to the fact that specialized organizations are a priori not aimed at reflecting the real picture of the impact of the planned activity on the environment, since polluting companies understand hiring such organizations as buying something in a store, i.e. the organization is obliged to ensure a positive EIA decision at any cost. Ultimately, this all leads to legal damage to biodiversity.

5. Key drivers and levers of change

Let's consider the main reasons for the driving forces and levers of change that shape the current state of affairs in the field of biodiversity in Kazakhstan.

Table 7 - Main causes of negative drivers and change agents

Negative driving force: Ignoring the interests of biodiversity when implementing large infrastructure and industrial projects, leading to systemic and long-term deterioration of environmental components and gradual loss of biodiversity.
Why? Environmental impact assessment in terms of impact on biodiversity is carried out purely formally. Authorized government bodies willingly turn a blind eye to the risks associated with biodiversity.
Why? The negative consequences of project failure are more dangerous for authorized government bodies and for project owners (investors) than the negative consequences for biodiversity.

Why? The country's top leadership evaluates the effectiveness of local authorities using financial metrics – the amount of investments attracted, the number of jobs created. Risks to biodiversity are not a compelling reason to revise, suspend, or, especially, cancel a project. For project investors, suspension or cancellation of the project is impossible due to the fact that before the environmental impact assessment stage they have already invested significant funds and expended significant human resources to obtain the right to implement this project (for example, a company won an auction for the development of a field, and there is no reverse motion, which does not lead to large fines and legal disputes).
Why? The activities of the country's top leadership are based on strategic documents for the development of Kazakhstan, which affirm the unconditional priority of developing industry, agriculture, attracting investment into the country and creating new jobs, without any mention of the relationship of these goals with risks to biodiversity. In turn, the investor at the stage of entering the project does not assess the risks associated with biodiversity, so as not to incur time and financial costs until such risks are identified.
Why? There is no mention of biodiversity and the risks associated with it in strategic development documents. Accordingly, the entire layer of lower-level strategic planning documents, the entire body of legislation regulating investment activities, "does not see" importance biodiversity, i.e. biodiversity is missing at this level – at the strategic decision-making level.
Why? Both government officials and the general public lack understanding of the word "biodiversity" in general, and its significance for sustainable development in particular. The very phrase "sustainable development" is also not sufficiently understandable for a wide range of stakeholders, primarily for the general public. Accordingly, there is no demand in society and the political field to solve biodiversity problems.
Why? Insufficient awareness of the population of Kazakhstan about biodiversity, insufficient and ineffective information support of the topic of biodiversity. Insufficient funding and ineffective strategy for the activities of experts in the field of biodiversity in Kazakhstan, who are theoretically able to change the specified root cause of the key negative driving force.

Table 8 - Main causes of positive drivers and change agents

Positive driving force: Low level of indifference (tolerance) of society and the country's top leadership to obvious facts of biodiversity loss, for example, to the facts of mass death of rare, endangered species of animals such as swans, seals or saigas.
Why? Public organizations whose activities are focused on environmental issues and civil activists focused on environmental issues, as public opinion leaders, attach the necessary level of importance to the visible facts of biodiversity loss.
Why? The activities of the central government bodies of Kazakhstan are highly dependent on social networks. Topics that become the most pressing and widespread on social networks do not go unnoticed by the country's top leadership.
Why? In Kazakhstan, there are 767 smartphones per 1,000 people, and internet penetration is 89.2%. In the modern history of the country, the largest socio-political crises began and developed through social networks. Accordingly, social networks are one of the most effective democratic institutions in the country.

This analysis leads us to the following conclusions. At this stage of development of the system of public administration and legislation of the Republic of Kazakhstan, attention needs to be focused on both the highest and lowest levels:

- there is a need to "eliminate illiteracy" on biodiversity issues, both among the general population and among key personnel in central government bodies.
- funding is required for activities aimed at professional systematic lobbying of biodiversity interests within the country's key strategic planning documents and primary laws. For example, this concerns ensuring the participation of experts representing and advocating for biodiversity conservation issues in working groups developing draft legislative acts;
- Funding activities that promote biodiversity issues on social media, popular among various demographics in Kazakhstan, would also be beneficial.

The expenses listed above, according to the subjective assessment of experts, have the highest conversion in terms of impact on the actual state of affairs with the conservation of biodiversity in Kazakhstan.

III. REVIEW OF THE CURRENT STATE OF BIODIVERSITY FINANCE

Biodiversity finance is financing that contributes or intends to contribute to activities to conserve, restore or prevent negative impacts on biodiversity and ecosystem services.

Nature, supported by biologically diverse ecosystems, plays a critical role in human survival, health, welfare, and economic prosperity. Half of the world's gross domestic product, or US$44 trillion, is produced in industries such as construction, agriculture and energy that rely heavily or moderately on nature or its services. At least two-thirds of agricultural production partially depends on animal pollination. This natural capital constitutes natural wealth and generates profits, driving economic growth and progress towards achieving the Sustainable Development Goals (SDG). Natural capital has this impact, along with industrial and human capital, as well as non-renewable natural resources.

Kazakhstan joined the UN Convention on Biological Diversity in 1994. In 2010, in Nagoya (Aichi Prefecture, Japan), the parties to the convention adopted the Strategic Plan for Biodiversity, including the 20 Aichi Biodiversity Targets for the period 2011–2020. Convention countries were required to develop, within two years, revised and updated national biodiversity strategies and action plans based on this common international framework. However, such a strategy has not yet been adopted in Kazakhstan. there is no targeted national policy for biodiversity conservation, and the country has not fulfilled its obligations.

According to the Environmental Performance Index 2022 (EPI), Kazakhstan ranks 93rd in biodiversity conservation among 180 countries in the world. At the same time, according to the "biodiversity" indicator, Kazakhstan ranks 113th, behind many countries in the world, with a much worse level of socio-economic development.

The 15th Conference of the Parties to the Convention on Biological Diversity (CBD), held in December 2022, marked a new phase in global biodiversity conservation efforts. During this conference, countries adopted the Kunming-Montreal Global Biodiversity Framework (GBF) to set nature on a path to recovery by 2030 and achieve the goal of living in harmony with nature by 2050.

The framework program includes four long-term goals and 23 targets aimed at actions covering three broad areas: reducing threats to biodiversity, meeting human needs through sustainable and equitable use, and implementing tools and solutions for action and implementation.

The corresponding monitoring mechanism of the GBF, adopted by the Parties under Decision 15/5 of the CBD, includes a set of key indicators reflecting the overall scale of goals and tasks, as well as a range of component and additional indicators enabling more detailed analysis.

Decision 15/6 on planning, monitoring, reporting, and review mechanisms strongly encourages all Parties to use key indicators in their respective national planning processes and requests all Parties to utilize these key indicators for national reporting under the Convention. According to Decision 15/5, Appendix 1, it states that "For key indicators, methodologies agreed upon by the Parties are used, which are calculated at the national level based on national data from national monitoring networks and national sources, taking into account that in specific cases, key indicators may require the use of global datasets.

6. Map of existing financial instruments and relevant legislation

Based on the analysis, the following map (list) of existing financial instruments for biodiversity conservation in the Republic of Kazakhstan has been generated:

Table 9 - Map (List) of Financial Instruments for Biodiversity Conservation in the Republic of Kazakhstan

No.	Financial instrument	Legislative basis	Comments
I. Incentive-based financial instruments			
1	**Payments for ecosystem services**	Article 243 of the Environmental Code of the Republic of Kazakhstan	In Kazakhstan, payments for ecosystem services are voluntary.
2	**Funding of scientific research in the field of conservation, reproduction and use of wildlife**	Law of the Republic of Kazakhstan "On Science"	Financing of scientific and (or) scientific and technical activities from the state budget is carried out in the following forms: 1) basic financing; 2) grant funding; 3) program-targeted financing; 4) financing of scientific organizations carrying out basic scientific research. Including funding for scientific research on the topic of biodiversity.
3	**Stimulating the implementation of "green" projects**	Article 130 of the Environmental Code of the Republic of Kazakhstan Decree of the Government of the Republic of Kazakhstan dated December 31, 2019 No. 1060, which approved: 1) Rules for subsidizing the coupon rate on bonds issued by business entities within the framework of the national project for the development of entrepreneurship for 2021 - 2025; 2) Rules for subsidizing part of the remuneration rate within the framework of the national project for entrepreneurship development for 2021 - 2025.	Green projects are defined in Note 1 to this table. This instrument is a key tool for attracting funding for activities that promote the conservation and restoration of biodiversity in Kazakhstan.

No.	Financial instrument	Legislative basis	Comments
4	**Introducing ESG principles into the financial sector**	Decree of the President of the Republic of Kazakhstan dated September 26, 2022 No. 1021 "On approval of the Concept for the development of the financial sector of the Republic of Kazakhstan until 2030"	The gradual introduction of ESG principles into the activities of the financial sector (primarily banks) will have an indirect but systemic impact on the growth of financing aimed at preserving biodiversity. The Concept sets out the following tasks: "To ensure sustainable business development that meets the main trends of the agenda in the field of environmental, social and corporate governance, the Agency for Regulation and Development of the Financial Market (hereinafter referred to as the Agency) plans to establish legislative requirements for the internal risk management systems of financial organizations in accordance with ESG principles. The financial institution's strategy and business model will need to take into account sustainability goals, ESG factors and associated risks, and the establishment of strategic goals and/or limits related to ESG risks. The corporate governance system should be built taking into account the experience of members of the board of directors in matters of sustainable development, environmental protection, securing the responsibility of the board of directors for monitoring and control of ESG risks through special committees, the remuneration system should take into account the achievement of sustainable development goals and effective management of ESG risks. In addition, financial institutions will need to have clearly regulated internal procedures and policies for managing ESG risks, integrated into the existing risk management system, including the investment decision-making process."

No.	Financial instrument	Legislative basis	Comments
II. Compensatory financial instruments			
5	**Charging a fee for removal from the animal world (establishing a fee for the use of the animal world)**	Article 582 of the Tax Code of the Republic of Kazakhstan	In this case, the components of biodiversity serve as a source of income for the state budget. The impact on the conservation of biodiversity can only be assessed as indirect - payment for the use of wildlife limits the number or volume of seizures. For foreign citizens, the fee rate is automatically multiplied by 10.
6	**Payment for special use of flora**	Law of the Republic of Kazakhstan "On Flora"	In accordance with Article 27 of this Law, special use of flora includes: - use of flora for livestock needs; - use of flora for pharmaceutical, food and technical needs. Special use of flora is carried out subject to payment of fees for the use of plant resources in accordance with the tax legislation of the Republic of Kazakhstan and sending a notification in the field of protection, protection, restoration and use of flora in the manner established by this Law and the Law of the Republic of Kazakhstan "On Permits and Notifications"
7	**Biodiversity offsetting**	Industry compensation: Methodology for calculating the amount of compensation for damage caused and caused to fish resources and other aquatic animals, including inevitable, as a result of economic activities, approved by order of the Deputy Prime Minister of the Republic of Kazakhstan - Minister of Agriculture of the Republic of Kazakhstan dated August 21, 2017 No. 341	Compensation for damages is carried out through the implementation of measures providing for the release of fish seeding material into fishery reservoirs, restoration of spawning grounds and fishery reclamation of water bodies on the basis of an agreement concluded with the department of the authorized body.

No.	Financial instrument	Legislative basis	Comments
		Compensation common to all industries: Rules for the implementation of compensation for loss of biodiversity, approved by order of the Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan dated May 19, 2021 No. 151	Compensation is provided in the form of: 1) restoration of biodiversity lost as a result of the activities carried out; 2) introduction, based on the results of scientific research, of the same or another type of biodiversity that is no less important for the environment in the same territory (in the water area) and (or) in another territory (in the water area), where such biodiversity is more important.
8	**Mandatory environmental insurance**	Law of the Republic of Kazakhstan "On Compulsory Environmental Insurance"	In accordance with paragraph 2) of Article 14 of this Law, the amount of the insurance amount is at least 65,000 monthly calculation indices (3,450 tenge in 2023) for legal entities, i.e. not less than 224,250,000 tenge (about US$487.500). It is important to note that the amount of the insured amount is the same for all legal entities, regardless of the risk to the environment and biodiversity the activity poses. Article 17 of this Law stipulates that an insured event under a compulsory environmental insurance contract is recognized as the occurrence of civil liability of the insured to eliminate (remediate) environmental damage caused as a result of an accident. It should be noted that this Law relates the occurrence of an insured event only to an "accident". Thus, long-term or non-immediate negative impacts on biodiversity are not covered by insurance.
9	**Liquidation funds of subsoil users**	Article 217 of the Code of the Republic of Kazakhstan "On Subsoil and Subsoil use"	Subsoil users are required to develop plans for eliminating the consequences of their activities after the expiration of their licenses.

No.	Financial instrument	Legislative basis	Comments
			Financing of work related to the liquidation or conservation of an object is carried out from the liquidation fund. Contributions to the liquidation fund are made by the subsoil user to a special deposit account in any second-tier bank in the territory of the Republic of Kazakhstan. It should be noted that today there is no direct relationship between the plan to compensate for the loss of biodiversity and this liquidation plan.
III. Financial instruments aimed at conserving and restoring biodiversity			
10	**Standards imposing obligations on private and public enterprises engaged in economic and other activities to finance the conservation and restoration of biodiversity**	clause 1) clause 3 of article 17 of the Law of the Republic of Kazakhstan "On the protection, reproduction and use of wildlife"	When carrying out the types of activities listed in Note 2 to this list, in agreement with the Committee of Forestry and Wildlife of the MENR RK, when developing a feasibility study and design estimates, provide funds for the implementation of measures to ensure: 1) preservation of habitat, breeding conditions, migration routes and places of concentration of fauna; 2) reproduction of the animal world, including artificial breeding of animal species, including valuable, rare and endangered ones, with their subsequent release into the habitat. Unfortunately, the legislation does not have effective mechanisms for: consolidation of information on all such measures, on the amounts of money spent; public reporting on the fulfillment of undertaken obligations; state and public control over the fulfillment of such obligations; state and public control over the actual expenditure of funds; bringing to responsibility for non-fulfillment or improper fulfillment of such obligations.

No.	Financial instrument	Legislative basis	Comments
11	**Creation and financing of activities of specially protected natural areas**	Law of the Republic of Kazakhstan "On Specially Protected Natural Areas"	Here the expenditures of the state budget on the creation and maintenance of protected areas are consider.
12	**Direct government financing of environmental protection measures**	Article 29 of the Environmental Code of the Republic of Kazakhstan, Standard list of environmental protection measures (Appendix 4 to the Code)	Note 3 lists environmental protection measures. The approved environmental action plan is implemented at the expense of budget funds **in an amount not less than the amount of payment for negative environmental impact** received by the local budget during the three years preceding the year of development and approval of this action plan. Unfortunately, there is no detailed analysis for each type of event from the Model List. Not all activities listed in the Model List have a direct impact on biodiversity. For example, "installation work related to the rationalization of thermal systems." It would be an advantage to have an information system where for each type of activity it would be possible to obtain analytics by region, obtain the exact amount of state budget expenditures for the implementation of such activities, and see detailed reporting for each specific project.
13	**Financing of environmental protection measures by polluting enterprises**	Article 125 of the Environmental Code of the Republic of Kazakhstan Rules for issuing environmental permits, submitting an environmental impact statement, approved by order of the Acting Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan dated August 9, 2021 No. 319.	The Rules define the key requirements for the development by polluting enterprises of an Environmental Protection Action Plan for the period of validity of the environmental permit. At the same time, column 17 of the Action Plan displays the amount of funding, which is of greatest interest for the purposes under consideration. The action plan focuses primarily on reducing emissions into the environment, which is of course extremely important for the conservation of biodiversity, but has a very global impact. At the same time, little or less attention is paid to specific tasks for the conservation of biodiversity at the site where a particular enterprise operates.

No.	Financial instrument	Legislative basis	Comments
14	**Mandatory contributions from subsoil users for the socio-economic development of the region**	Clause 3) Article 129 of the Code of the Republic of Kazakhstan "On Subsoil and Subsoil Use"	In accordance with this norm, during the production period, starting from the second year, the subsoil user is obliged to annually finance the socio-economic development of the region and the development of its infrastructure in the amount of one percent of the investments under the subsoil use contract during the period of hydrocarbon production based on the results of the previous year. Financing expenses for the socio-economic development of the region and the development of its infrastructure includes the expenses of the subsoil user for the development and maintenance of social infrastructure facilities in the region, support for social entrepreneurship entities, as well as funds transferred by it to the state budget for these purposes. Unfortunately, when determining the recipient project for such funds, which amount to significant amounts of money, the concept of "socio-economic development of the region" does not include biodiversity objects, i.e. biodiversity is not considered as the basis for successful socio-economic development.
15	**Voluntary private financing**	Law of the Republic of Kazakhstan "On Charity", Law of the Republic of Kazakhstan "On International Treaties"	International organizations, within the framework of international agreements concluded with the Government of the Republic of Kazakhstan, as well as without concluding such agreements, finance the conservation and restoration of biodiversity. International, public and private organizations and individuals finance the conservation and restoration of biodiversity within the framework of the Law of the Republic of Kazakhstan "On Charity".

Notes on the table:

Note 1.

"Green" financing refers to investments aimed at implementing "green" projects and attracted through instruments such as "green" bonds, "green" loans and other financial instruments, determined by the authorized body for regulation, control and supervision of the financial market and financial organizations.

"Green" projects include projects identified on the basis of an approved classification (taxonomy) aimed at increasing the efficiency of use of existing natural resources, reducing the level of negative impact on the environment, increasing energy efficiency, energy saving, mitigating the effects of climate change and adapting to climate change.

Note 2.

Types of activities listed in Article 17 of the Law of the Republic of Kazakhstan "On the Protection, Reproduction and Use of Wildlife", which require financing of measures for the conservation and restoration of biodiversity:

"When locating, designing and constructing settlements, enterprises, structures and other objects, implementing production processes and operating vehicles, improving existing and introducing new technological processes, introducing into economic circulation unused, coastal, wetlands, areas occupied by shrubs, land reclamation, use of forest resources and water bodies, carrying out geological exploration work, mining, determining places for grazing and running farm animals, developing tourist routes and organizing places of mass recreation for the population...", "During the operation, placement, design and construction of railways, highways, pipelines and other transport routes, power and communication lines, canals, dams and other water management structures".

Note 3.

Environmental protection measures include activities:

1) *aimed at ensuring environmental safety;*
2) *improving the state of environmental components by increasing the quality characteristics of the environment;*
3) *contributing to the stabilization and improvement of the state of ecological systems, conservation and sustainable use of biodiversity, reproduction of natural resources;*
4) *preventing and preventing environmental pollution, degradation of the natural environment, causing environmental damage in any form and related threats to human life and (or) health;*
5) *aimed at ensuring the safe management of hazardous chemicals, including persistent organic pollutants, reducing the level of chemical, biological and physical impacts on the environment, both anthropogenic and natural;*
6) *improving methods and technologies aimed at environmental protection, sustainable use of natural resources and the introduction of international environmental management standards;*
7) *increasing the efficiency of industrial environmental control;*
8) *forming information systems in the field of environmental protection and facilitating the provision of environmental information;*
9) *promoting environmental knowledge, environmental education and awareness for sustainable development;*
10) *aimed at reducing greenhouse gas emissions and (or) increasing the absorption of greenhouse gases.*

7. Overview of the national budget process

The Budget Code is the main document regulating state budget issues. The Budget Code of the Republic of Kazakhstan covers the state budget system, budget planning and budget execution.

Main government bodies involved in the budget management process:

- **MNE RK** – management and coordination in the field of state planning, budget policy, forecasting for budget planning;
- **MF RK** – management in the field of budget planning, budget execution, budget accounting and reporting;
- **Republican Budget Commission** – development of the draft republican budget for the planning period;
- **Parliament** – changes and approves the republican budget;
- **Accounting Committee** – exercises control over the execution of the republican budget.

Development and adoption of the state budget

Stage 1. Forecast of socio-economic development

The formation of the republican budget begins with a forecast of socio-economic development. Taking into account the forecast of socio-economic development, the MF RK is developing the republican budget.

The regional budget, budgets of the city of republican significance, the capital, district (city of regional significance) budget are developed annually for the planning period by local authorized bodies for state planning, taking into account the forecast of socio-economic development of the region, city of republican significance, the capital, in compliance with the standard for the allocation of funds for activities on environmental protection.

According to paragraph 1-1 of Article 64 of the Budget Code of the Republic of Kazakhstan the standard for allocating funds to environmental protection measures is adopted in the amount of at least one hundred percent of the fee for negative environmental impacts received by the local budget during the three years preceding the year of development and approval of the environmental protection action plan provided for by the Environmental Code of the Republic of Kazakhstan.

Stage 2. Expense limits

Taking into account the forecast of socio-economic development, the MF RK prepares an initial estimate of the distribution of expenses for each ministry and department, taking into account fixed costs (administration and salaries), maintenance of the existing level of activity in the field of public services and opportunities for new policy initiatives, as well as general budget constraints , arising from the Concept of the National Fund.

Expense limits for administrators of republican budget programs are determined by the central authorized body for budget planning.

Expense limits for administrators of budget programs financed from the local budget are determined by local authorized bodies for state planning. Expense limits are determined for each budget program administrator.

Stage 3. Budget request

A budget request is a set of documents compiled by the administrator of budget programs for the next planning period to justify the volume of expenses. The budget request is compiled on the basis of and within the limits of the expenditure limits of budget program administrators.

Stage 4. Consideration of draft development plans of government agencies or draft amendments and additions to development plans of government agencies, draft budget programs and budget requests

Based on the results of consideration of the submitted documents, the MF RK forms a conclusion.

Stage 5. Development of a draft law on the republican budget

MF RK draws up a draft republican budget and submits it for consideration by the Republican Budget Commission, after which the draft law on the republican budget is submitted for consideration to the Government of the Republic of Kazakhstan.

Stage 6. Development of a draft decision of the maslikhat on the regional budget, on the budgets of the city of republican significance, the capital

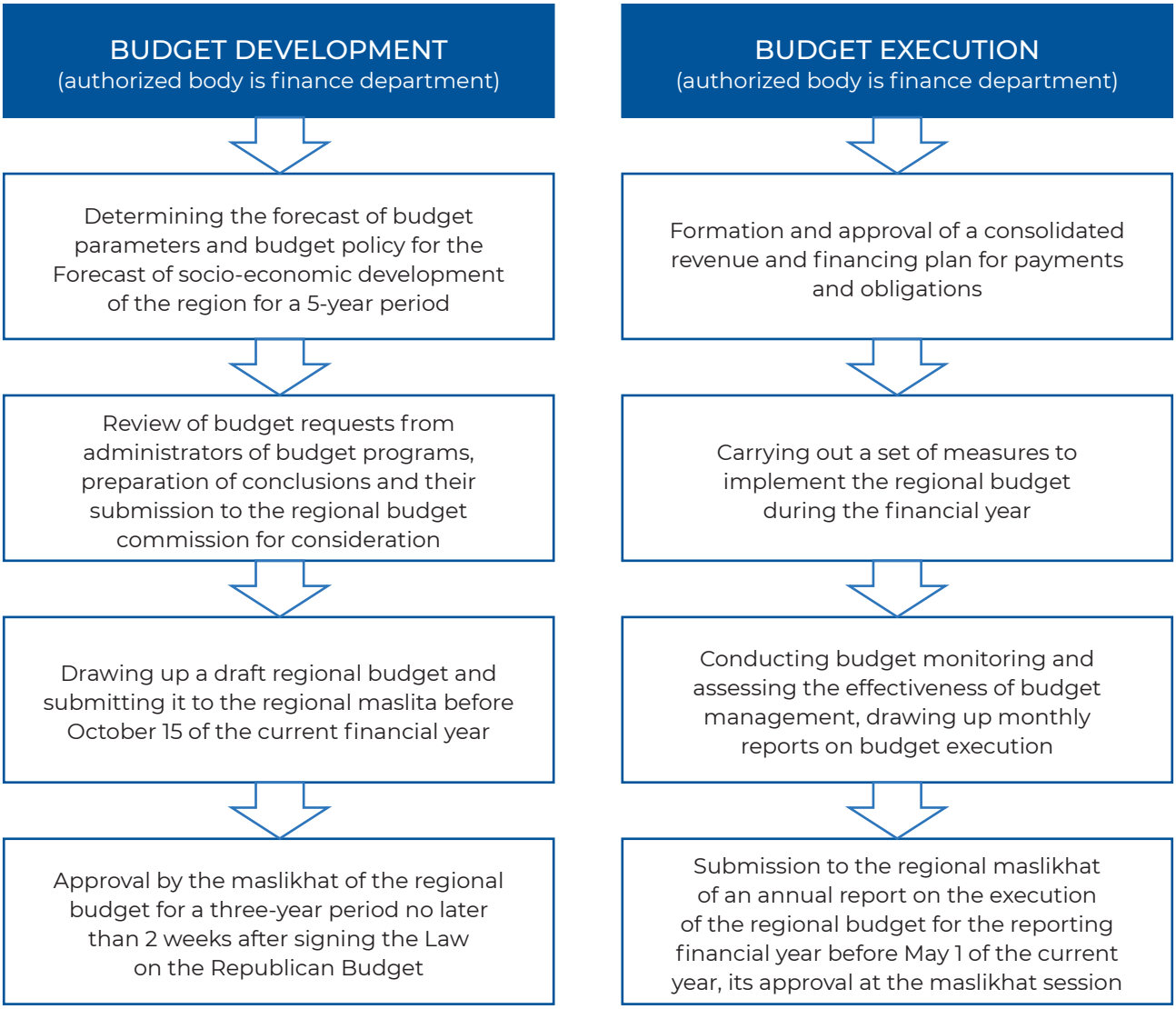
The local authorized body for state planning draws up a draft regional budget, the budgets of the city of republican significance, the capital and submits it for consideration by the budget commission of the region, city of republican significance, the capital.

Stage 7. Review and approval of the republican budget

The draft law on the republican budget is submitted by the Government of the Republic of Kazakhstan to the Parliament of the Republic of Kazakhstan. The approval of the republican budget takes place in a separate meeting of the Chambers through sequential consideration first in the Mazhilis and then in the Senate.

Stage 8. Review and approval of the draft local budget

The draft regional budget, budget of a city of republican significance, the capital, district (city of regional significance), cities of regional significance, villages, towns, rural districts is submitted by the local executive body of the region, city of republican significance, capital to the corresponding maslikhat.



In accordance with Article 53 of the Budget Code of the Republic of Kazakhstan, expenses of the republican budget are provided for in the agro-industrial complex, water, forestry, fisheries, specially protected natural areas and environmental protection, land relations, in particular for forest management, forest seed production and selection, protection and reproduction of fish resources and other aquatic animals, maintenance of specially protected natural areas of republican significance, restoration of the state natural reserve fund.

According to Article 54 of the Budget Code, the regional budget is spent on regulating the development of crop production, seed production, livestock farming, veterinary medicine, processing and sale of agricultural products at the regional level in accordance with the laws of the Republic of Kazakhstan, conservation, protection, reproduction of forests and afforestation, maintenance and protection of specially protected natural areas of local importance, protection of wildlife.

Below is an expert assessment of a key problem area in the national budgeting process from the perspective of biodiversity interests:

Table 10 - Key problem areas from the perspective of biodiversity interests

Key challenge, problem	What is the challenge or problem, and how is it manifested?	Suggested Solutions
The budget deficit and the "social orientation" of the budget, i.e. focus on solving accumulated urgent problems	The Government of Kazakhstan has formed a draft republican budget for 2024–2026. It provides for two types of transfers from the National Fund – guaranteed and targeted. The total amount of transfers is 3.6 trillion tenge (about 8 billion US dollars). The National Fund accumulates income from the oil and gas sector of the economy, which is one of the key sources of biodiversity problems. 55% of these funds will be used to finance the budget deficit (to "close the hole" in the budget). 45% of the funds will go to finance various social and infrastructure projects arising from the pre-election and subsequent political platform of the current President of Kazakhstan. Accordingly, when the budget is approved, any proposals regarding the long-term conservation of biodiversity are rejected without discussion.	It is required to carry out systematic expert and analytical work, the output of which will be a systematic PR and GR strategy for information promoting and legitimate lobbying the interests of biodiversity in Kazakhstan. A clear demonstration of the value of biodiversity is required. A clear demonstration of the losses incurred by the Kazakh economy from the loss of biodiversity is required. A clear demonstration of the impact of every tenge spent on biodiversity conservation is required. It is necessary to provide a politically motivated evidence base for the need for strategic financing of biodiversity conservation tasks, including by accepting conditional losses from failure to implement certain investment and industrial projects. For example, on behalf of the President, 1.4 billion tenge (about 3 million US dollars) was allocated for the politically motivated task of preserving and reviving the traditional Kazakh dog breeds "Tazi" and "Tobet".

8. Biodiversity Revenue Analysis

Biodiversity generates revenue through direct economic benefits, including income from the extraction and sale of biodiversity components, revenue from services using or based on biodiversity components, as well as fees and taxes.

Given that the state is a key stakeholder in biodiversity-related decisions, both tax and non-tax revenues from biodiversity are crucial for the state.

From a formal perspective, all types of budget revenues are defined in the Budget Revenue Classifier[1]. The classification's formality lies in identifying revenues related to biodiversity. Whether a revenue source relates to biodiversity is a matter of debate.

For instance, fees for wildlife use, in our view, are a legalized form of biodiversity exploitation. By setting norms for the extraction of hunted animal species, the state establishes a consensus on how much extraction can occur without critically reducing population levels. If this approach is scientifically justified, fees for wildlife use can be considered biodiversity-related revenues.

However, categorizing revenues like "Funds received from natural resource users for claims for damage compensation by oil sector organizations" as biodiversity-related revenues is more debatable. In our view, funds received as compensation for environmental damage cannot be considered "revenues" since they at best compensate for a conditional portion of the value lost by nature, including biodiversity.

Applying this logic, the budget revenues related to biodiversity in Kazakhstan for 2023, based on the Committee of State Revenues data, including the Budget Classification Code (BCC), are as follows:

1) Fee for the use of surface water resources (BCC 105303): 2.1 billion tenge.

2) Fee for forest use (BCC 105304): 2.8 billion tenge.

3) Fee for wildlife use (BCC 105311): 2.4 billion tenge.

4) Fee for the use of specially protected natural territories (BCC 105313 and 105314): 1.3 billion tenge.

Thus, in total, budget revenues from activities related to biodiversity amount to at least 8.6 billion tenge annually.

However, in our opinion, corporate income tax and individual income tax from companies and individuals engaged in activities where biodiversity is the key value should also be considered as budget revenues related to biodiversity. However, accurately defining the taxes paid by such organizations and individual entrepreneurs appears to be a complex task requiring extensive research and analysis across all sectors of the economy.

Nevertheless, we can approximate the volume of such revenues using the following method:

1. Determine the gross income of the economic sector where dependence on biodiversity is high.

2. Apply the average industry tax burden coefficient, according to the Committee of State Revenues of Kazakhstan's data or, in the absence of such data, the profit tax burden rate (Profit TTCR %): 16.4%, as defined by the World Bank and presented in the Institute of Economic Research of Kazakhstan's study.

[1] Approved by order of the Minister of Finance of the Republic of Kazakhstan dated September 18, 2014 No. 403.

The basis for this analysis is the data from the National Statistics Bureau of Kazakhstan on the gross production[2] of goods in sectors that, in our expert view, primarily derive income from the use and exploitation of biodiversity. It should be noted that practically every sector of the economy relies on biodiversity in the broadest sense, as all living organisms consume air, water, food, etc. However, we focus on those sectors that most directly utilize biodiversity

First and foremost, such sectors as agriculture, forestry, hunting, and fishing are primarily related to biodiversity. The gross production of goods and services in this sector in 2022 amounted to 9.5 trillion tenge. Applying a tax burden coefficient of 6.7% to this amount yields **a budget revenue of 636.5 billion tenge from this sector.**

The second sector that indisputably relies on biodiversity is tourism. Certainly, a discount should be made for the share of business tourism, which is not directly related to visiting natural sites. According to analytical data, tourists visiting Kazakhstan for tourism purposes constitute 40.6%, business purposes 21.8%, private purposes 22.3%, and other purposes 15%[3].

According to the MTS RK, tourism taxes for 2022 amounted to 389 billion tenge, marking a record high. To provide objectivity, deducting 20% attributed to business tourism from this amount results in tourism revenue for the budget amounting to **311.2 billion tenge.**

Determining the proportion of biodiversity use in other sectors of the economy is a question that requires deep research and is quite debatable. For example, hydroelectric power utilizes surface water bodies and has a significant negative impact on biodiversity. However, the specific contribution of biodiversity to the revenues generated from electricity sales remains unclear.

In summary, based on the above, it can be concluded that **budget revenues related to biodiversity in the Republic of Kazakhstan amount to at least 955.3 billion tenge annually.**

[2] Gross output is the output of goods and services, representing the total value of goods and services resulting from the production activities of resident units of the national economy in the reporting period

[3] https://tourstat.kz/singlenews/83 "Turstat Information System" of the Ministry of Tourism and Sports of the Republic of Kazakhstan

IV. ANALYSIS OF THE MAIN INSTITUTIONS

Studying new natural territories and ecosystems, such as forest ecosystems, we are always interested in learning about the fauna – predators and herbivores, birds that inhabit the area, their impact on the environment, dominant species, and more.

Similarly, within the "ecosystem of the state," there exists a diverse and equally intriguing world of institutions and organizations, each with its own "evolutionary path of development," roles within the ecosystem. In this section, we aim to introduce you to the world of key state institutions and formalized structures of Kazakhstan, attempting to explore their connection with the theme of biodiversity.

9. Identification of key institutions and organizations

One of the tasks of current political and institutional analysis can be defined as "mapping the political and institutional landscape," which involves understanding whom one must engage with when addressing biodiversity financing issues.

Among Kazakhstan's institutional challenges is the instability of state structures, manifested in frequent mergers and divisions of ministries, the transfer of functions between agencies, and blurred lines of responsibility among state institutions even within specific economic sectors.

For instance, the task of biodiversity financing itself exhibits an amorphous, distributed-decentralized nature in terms of state competencies. This task originates within the MENR RK, and then, regarding state financing issues, transitions into the structures of the MNE RK and MF RK, requiring legitimization through the MJ RK structures and subject to indirect but critical influence from the PA, particularly when discussing new conceptual approaches rather than existing tools.

Such a situation means that initiatives for biodiversity financing formally supported by MENR may remain unrealized indefinitely without a formalized, objective, and specific reason or an identifiable opponent within the system. This scenario recalls the earlier mention of the National Biodiversity Conservation Strategy, which has remained unapproved for 25 years.

Further, the discussion examines key formalized actors within Kazakhstan's institutional "landscape":

Table 11 - Analysis of Major Institutions

Institution	Mandate	Connection to biodiversity
MENR RK	Provides management in the areas of formation and implementation of public policy, coordination of management processes in the areas of environmental protection, meteorological and hydrological monitoring, development of the green economy, waste management (with the exception of medical, biological and radioactive waste), protection, control and supervision of the rational use of natural resources, forestry, protection, reproduction and use of wildlife, specially protected natural areas, protection, protection, restoration and use of flora, conservation and reproduction of Kazakh dog breeds.	Key government body responsible for biological diversity.
Ministry of Agriculture	Provides management in the following areas: 1) agro-industrial complex; 2) irrigated agriculture and agromelioration; 3) land resources; 4) protection, reproduction and use of wildlife in terms of aquaculture; 5) also, within the limits provided for by law, intersectoral coordination of government bodies in the field of activity within its competence.	Forms and implements state policy in the field of seed production, beekeeping, plant protection, protection, reproduction and use of wildlife in terms of aquaculture, develops and approves rules for subsidizing increasing the productivity and quality of aquaculture (fish farming) products, as well as the development of breeding fish farming, increasing the yield and quality of crop products, determines the areas of state support for seed production, the list of agricultural plants whose seeds are subject to subsidies from budget funds, and the standards for subsidies for them, develops and approves rules for subsidizing the development of seed production, participates in the implementation of state policy in the field of biological safety.
MWRI RK	Provides management in the formation and implementation of state policy, coordination of management processes in the areas of control in the field of use and protection of the water fund, water supply, sewerage and irrigation.	Carries out strategic, regulatory, implementation and control functions in regulated areas, ensures the formation and implementation of state policy in regulated areas.
MES RK	Provides management in the areas of prevention and response to emergencies of a natural and man-made nature, civil defense, fire and industrial safety, the formation and development of the state material reserve, ensuring the functioning and further development of the state civil protection system, organizing the prevention and extinguishing of fires.	Develops and approves biological risk management methodology; approves the rules for ensuring industrial safety for production facilities of industries, as well as activities related to the use of nuclear energy, operation of main pipelines and dangerous technical devices.

Institution	Mandate	Connection to biodiversity
MTS RK	Provides management in the areas of physical culture and sports, gambling, lottery and lottery activities, and tourism activities.	Forms and implements state policy in the areas of tourism, tourism and the tourism industry, coordinates activities for the construction and improvement of tourism infrastructure; organizes survey work for the development of the tourism industry, creates a state system of scientific support in the field of tourism activities; subsidizes the costs of tour operators in the field of inbound tourism for each foreign tourist.
MNR RK	Provides management and intersectoral coordination in the areas of: state planning, tax, budget and customs policies, policies to attract investments, state and state-guaranteed borrowing and debt, public-private partnerships, public investment projects, advertising, natural monopolies, regional development, development of local self-government, development and support of private entrepreneurship, self-regulation, development of agglomerations; state regulation and control in the areas of natural monopolies, bilization preparation and mobilization.	Carries out the development of budget policy, implementation of state policy in the field of state planning, development of the Territorial Development Plan of the country; development of a forecast for the socio-economic development of the republic; formation of tax and budget policy.
MF RK	Provides management in the areas of: budget planning, budget execution, tax and customs administration.	Carries out the formation and implementation of state policy in the field of budget planning, countervailing duties; ensuring the completeness and timeliness of receipt of taxes and other obligatory payments to the budget.
MEN RK	Carries out the formation and implementation of state policy, coordination of the management process in the areas of oil and gas, petrochemical industry, transportation of hydrocarbons, in the field of subsoil use in terms of hydrocarbons, uranium mining, state regulation of the production of petroleum products, gas and gas supply, main pipelines, electric power, heat supply in terms of combined heat and power plants and boiler houses producing thermal energy in the area of centralized heat supply (except for autonomous boiler houses), using nuclear energy, ensuring radiation safety of the population, supporting renewable energy sources.	Carries out the formation and implementation of public policy, improvement of the public administration system in the areas of oil and gas, petrochemical industry, transportation of hydrocarbons, in the field of subsoil use in terms of hydrocarbons, uranium mining, state regulation of the production of petroleum products, gas and gas supply, main pipelines, electric power, heat supply in terms of combined heat and power plants and boiler houses producing thermal energy in the centralized heat supply zone (except for autonomous boiler houses), using nuclear energy, ensuring radiation safety of the population, supporting renewable energy sources and providing regulatory legal acts and regulatory and technical documents within their competence.

Institution	Mandate	Connection to biodiversity
MDDIAI RK	Provides management and intersectoral coordination in the areas of aerospace and electronics industry, in the field of innovation, scientific and technological development of the country, geodesy, cartography and spatial data, ensuring information security in the areas of informatization, "electronic government", personal data and its protection, digital assets, project management, as well as in the field of communications, development of public policy in the provision of public services and data management.	Carries out the development and approval of instructions for the creation and updating of the National Spatial Data Infrastructure, for the creation of cartographic products at the expense of budget funds, instructions in the field of geodesy and cartography, organizing the functioning of an environmental observation system using space-based surveillance and remote sensing (space monitoring); organizing the functioning of an observation system for the state of the environment in areas affected by the rocket and space activities of the Baikonur complex.
MIA RK	Manages the system of internal affairs bodies of the Republic of Kazakhstan, as well as, within the limits provided by law, intersectoral coordination in the field of combating crime, protecting public order and ensuring public safety.	Prosecution for offenses in the field of environmental protection and use of natural resources.
MFA RK	Provides management in the field of foreign policy activities and heads the unified system of diplomatic service bodies of the Republic of Kazakhstan, as well as in the implementation of state policy to attract investment.	Coordinates the international activities of other government bodies in order to ensure the implementation of a unified foreign policy, foreign economic policy and investment policy of the Republic of Kazakhstan in relations with foreign states and international organizations, participation in ensuring the interests of the Republic of Kazakhstan in the field of international protection and rational use of water resources and the environment, development of the resources of the world's oceans, exploration of outer space, coordination of the activities of central executive bodies in relations with foreign states, interstate associations and international organizations.
MD RK	Provides management in the field of defense, military-political and military-economic management of the Armed Forces of the Republic of Kazakhstan (hereinafter referred to as the Armed Forces), as well as the authorized body in the fields of state aviation and territorial defense.	Ensures biological safety within the competence established by the legislation of the Republic of Kazakhstan.

Institution	Mandate	Connection to biodiversity
MJ RK	Provides management in the following areas: 1) conducting legislative work, improving legislation; 2) legal support for international treaties, coordination of foreign legal assistance; 3) forensic expert activities; 4) carrying out state registration; 5) organization and provision of legal assistance, legal propaganda; 6) implementation of state policy in the field of protection and enforcement of intellectual property rights; 7) ensuring the execution of executive documents.	Carries out legislative work and improves legislation.
MSHE RK	Provides management in the field of higher and postgraduate education, language policy, science, quality assurance in the field of science, higher and postgraduate education, digitalization of science, higher and postgraduate education.	Carries out the development and approval of standards for financing scientific organizations carrying out fundamental scientific research, international cooperation in the field of science, development of regulatory legal acts in the field of scientific and scientific-technical activities, implementation of a unified state policy in the field of higher and (or) postgraduate education, implementation of intersectoral coordination, development and implementation of international programs in the field of higher and (or) postgraduate education and science, development and approval of standard curricula for a cycle of educational disciplines for organizations of higher and (or) postgraduate education.
MH RK	Provides management and intersectoral coordination in the areas of: 1) protecting the health of citizens; 2) medical and pharmaceutical science, education and industry; 3) circulation of medicines, medical devices and control over their circulation; 4) control over the quality of medical services (assistance); 5) sanitary and epidemiological welfare of the population, control and supervision of compliance with the requirements established by technical regulations and normative documents; 6) food safety at the stage of its sale; 7) biological safety.	Coordinates draft regulatory legal acts, regulatory technical documents, national and (or) interstate standards related to issues of ensuring biological safety, maintains a state information system in the field of biological safety, develops and approves rules for maintaining records, monitoring and forecasting (modeling) in the field of biological safety.

Institution	Mandate	Connection to biodiversity
MLSPP RK	Provides management in the social and labor sphere, as well as in the field of population migration within the scope of competence.	Carries out the development and implementation of programs in the field of labor, employment, migration and social protection of the population, social security, including pensions and compulsory social insurance, including areas related to biological diversity – agriculture, forestry, fisheries.
MT RK	Provides management in the fields of transport and communications, as well as, within the limits provided by law, intersectoral coordination.	Coordinates activities to create and develop a network of regional and district public roads; ensuring the safety of transport and its life cycle processes for human life and health and the environment, suspends and terminates the operation of objects of the main railway network, railway tracks and rolling stock, the condition of which does not meet the established requirements for traffic safety and environmental protection.
MCI RK	Provides management in the areas of culture, protection and use of objects of historical and cultural heritage, cinematography, state symbols, archival affairs and documentation support for management, electronic document management and electronic archives, in the field of onomastics, creative industries and commercialization of the results of creative activity, information, interaction between the state and civil society, religious activities, state youth and family policy, modernization of public consciousness, charity, volunteerism, mediation, ensuring internal political stability, interfaith and interethnic harmony, access to information, online platforms and online advertising, as well as within the limits, provided for by law, intersectoral coordination and government regulation.	Carries out the formation of public policy in the areas of: culture, as well as international cultural relations; protection and use of historical and cultural heritage sites; access to information; modernization of public consciousness, including on the issues of disseminating information about biological diversity in the media.
ME RK	Provides management in the areas of: preschool, secondary, technical and vocational, postsecondary education, additional education and protection of children's rights and quality assurance in the field of preschool, secondary, technical and vocational, postsecondary education.	Carries out the development and approval of standard curricula for a cycle or module of general education disciplines for organizations of technical and vocational, post-secondary education, including in disciplines related to biological diversity (biology, natural science, etc.).

Institution	Mandate	Connection to biodiversity
		Carries out the development and approval of standard curricula and educational programs for children's music schools, children's art schools and children's art schools; determination and approval of a basic textbook and educational and methodological complex in individual subjects for secondary education organizations, including disciplines related to biological diversity (biology, natural science, etc.).
MIC RK	Provides management in the areas of industry and industrial development; industry; mining and metallurgical complex; development of in-country value; mechanical engineering; coal, chemical, light (except for processing of hides and wool of farm animals), woodworking and furniture industries; construction industry and production of building materials; safety of machinery and equipment; safety of chemical products in accordance with industry focus; control of specific goods; energy saving and energy efficiency improvement; regulation of the production of precious metals and the circulation of precious metals and precious stones; commodities containing precious metals; jewelry and other products; creation, operation and abolition of special economic zones; state management of subsoil use in terms of solid minerals, with the exception of uranium mining; state geological study of subsoil, reproduction of the mineral resource base; architectural, urban planning and construction activities; housing relations; public utilities; state regulation in the field of water supply and sanitation, heat supply (except for combined heat and power plants and boiler houses producing thermal energy in the district heating supply zone) within populated areas; equity participation in housing construction; defense industry; participation in the implementation of a unified military-technical policy; implementation of military-technical cooperation; in the field of formation, placement and implementation of state defense orders.	Coordinates water protection measures carried out by individuals and legal entities aimed at preventing the depletion of water bodies, approval of construction, reconstruction (expansion, modernization, technical re-equipment, repurposing), operation, conservation, liquidation (post-utilization) of objects affecting the condition of water bodies.

Institution	Mandate	Connection to biodiversity
MTI RK	Provides management in areas: 1) Development and regulation of foreign trade activities, international trade and economic relations, including regulation of international economic integration; 2) development and promotion of exports of non-commodity goods and services; 3) development and regulation of domestic trade, improvement of trade infrastructure, development of exchange and electronic trade; 4) consumer protection; 5) coordination of intersectoral government activities in the areas of consumer protection, technical regulation, standardization and ensuring uniformity of measurements, including strategic, control, implementation and regulatory functions.	

10. Analysis of each major institution to obtain a score on a scale of interest and influence

In this section, we attempt to assess and prioritize the influence and interests of each major institution regarding sustainable development and biodiversity conservation.

Undoubtedly, the ideal picture of the world would look such that all governmental and public institutions have a high level of interest in biodiversity and differ only in terms of their level of influence. However, the paradox in Kazakhstan lies in the fact that those governmental institutions and bodies with the least interest in biodiversity hold the most influence over issues of sustainable development, conservation, and biodiversity funding. This, in our view, is at the core of many problems hindering the improvement of the institutional environment for biodiversity and addressing its urgent issues.

In the assessment chart below, we visualize the evaluation of state agencies based on their influence and interests. The "structural flaws" of such a chart significantly reduce its reliability due to several factors:

- The assessment of a state institution's interest in biodiversity may be formal (as required by legislation) or subjectively situational (reflecting current realities and specific decision-makers).
- The assessment of a state institution's influence on biodiversity issues depends on the specific area of influence – whether in financing, decision-making, shaping perceptions among other state bodies, and so on.
- Interest and level of influence also hinge on how open a state institution is to international collaboration in biodiversity, and how much it depends on assessments from international institutions.

The chart provided below represents a compromise between these aspects:

Table 12 - Influence and interest assessment chart

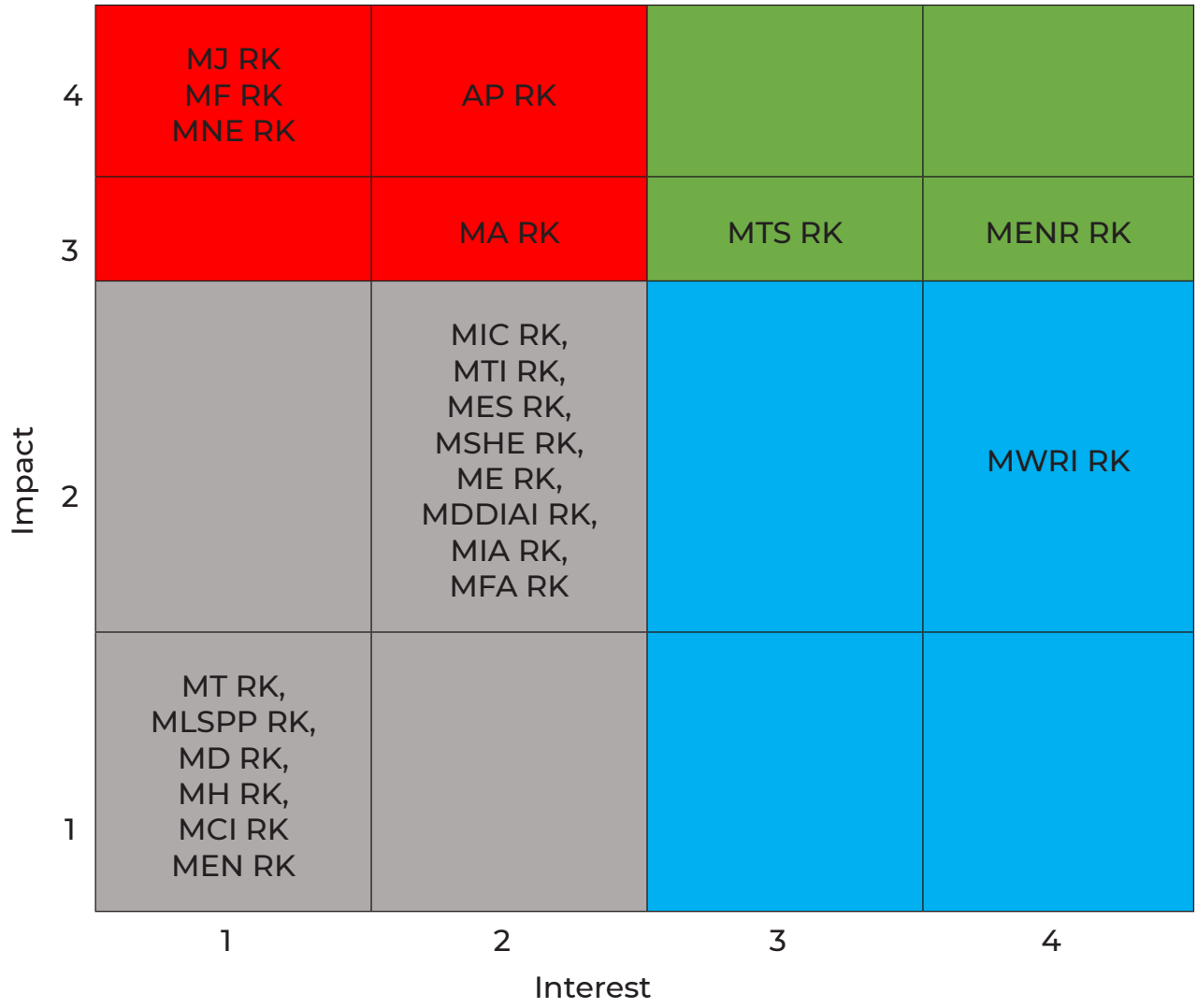


Table explanation:

Green color – authorities with sectoral interest and empowered to make decisions.

Red color – authorities without sectoral interest but having a decisive vote in decision-making.

Blue color – authorities with sectoral interest but whose influence is limited by the legislation of the Republic of Kazakhstan.

Gray color – authorities without sectoral interest and without influence on decision-making.

State authorities of the Republic of Kazakhstan play a key role in the preservation and financing of biodiversity, in the implementation of policies and measures aimed at protecting and improving biodiversity, and also ensure the necessary funding for these measures.

Administration of the President of the Republic of Kazakhstan

AP RK is a state body formed by the President of the Republic of Kazakhstan (hereinafter – the President), directly subordinate and accountable to him.

The mission of the AP RK is to provide high-quality and timely informational-analytical, legal, protocol-organizational, documentation, and other support for the activities of the President.

The main tasks of the AP RK are:

1) Ensuring the implementation of the President's powers:
   - In the field of foreign policy;
   - In the field of socio-economic and other areas of domestic policy;
   - In the field of defense capability and state security;
   - In the field of legal policy, legality, and law and order;
   - In the field of personnel policy;
   - Concerning the Parliament of the Republic of Kazakhstan (hereinafter – Parliament);
   - Concerning the Government of the Republic of Kazakhstan (hereinafter – Government) and central executive bodies;
   - Concerning the Constitutional Council of the Republic of Kazakhstan;
   - Concerning courts and judges;
   - Concerning the Central Election Commission of the Republic of Kazakhstan;
   - Concerning local representative and executive bodies, akims of regions, cities of republican significance, and the capital, and in the field of regional policy;
   - Concerning state bodies directly subordinate and accountable to him;
2) Ensuring the activities of the State Secretary of the Republic of Kazakhstan (hereinafter – State Secretary), the Assembly of the People of Kazakhstan, and consultative and advisory bodies under the President;
3) Other tasks established by the legislation of the Republic of Kazakhstan and (or) determined by the President.

The AP RK has a relatively higher **interest** than other influential bodies and **direct influence** on biodiversity financing (scale of 4).

Ministry of Ecology and Natural Resources of the Republic of Kazakhstan

MENR RK oversees the formation and implementation of state policy, coordination of management processes in the fields of environmental protection, meteorological and hydrological monitoring, development of the "green economy," waste management (excluding medical, biological, and radio-active waste), protection, control and super-vision of the rational use of natural resources, forestry, protection, reproduction and use of wildlife (excluding fish resources and other aquatic animals), specially protected natural areas, protection, restoration, and use of plant life, and the preservation and reproduction of Kazakh dog breeds.

The Ministry has departments:

1) Committee for Environmental Regulation and Control of the MENR RK;
2) Committee for Forestry and Wildlife of the MENR RK;

The MENR RK's interest in biodiversity financing is direct and primary, as it is a sectoral body initiating reforms related to biodiversity conservation (rated 4).

The MENR RK influences biodiversity financing primarily as an initiator of related reforms (scale of 3).

Ministry of National Economy of the Republic of Kazakhstan

MNE RK is the central executive body of the Republic of Kazakhstan responsible for management in various areas of economic policy, and it operates in the following areas:

Strategic planning: MNE RK develops strategies and plans for the country's economic development.

Tax and budget policy: MNE RK participates in the formation of tax and budget policy.

Macroeconomic analysis and forecasting: MNE RK analyzes macroeconomic indicators and forecasts their development.

Regional development: MNE RK deals with regional development issues.

Support for private entrepreneurship: MNE RK works to create conditions for the development of private business.

Investment attraction: MNE RK deals with attracting investments into the country's economy.

MNE RK includes the Committee for Regulation of Natural Monopolies.

MNE RK plays an important role in the country's development, including biodiversity and its financing. Here are some ways it influences this area:

1. Strategic planning and budget policy: MNE RK develops strategic plans and budget policies that may include measures for biodiversity conservation. This is important for setting priorities and allocating funds to relevant programs and projects.
2. Investment attraction: MNE RK attracts investments into various sectors of the economy, including environmental activities. Investments can be directed to biodiversity conservation projects, the creation of specially protected natural areas, and other activities.
3. Management of state assets: MNE RK controls state assets, including natural resources, allowing for effective management of natural objects and ensuring their conservation.
4. Cooperation with international organizations.
5. Support for private entrepreneurship: The development of the private sector can contribute to the sustainable use of natural resources and financing biodiversity conservation activities.

MNE RK plays a crucial role in the country's economic development and can potentially develop, launch, and scale biodiversity financing solutions. Here are several biodiversity financing tools:

- Environmental Investments: MNE RK can develop and support financial mechanisms for investing in projects related to nature conservation, species preservation, and biodiversity.
- Government Programs and Projects: MNE RK can participate in developing and implementing state programs and projects aimed at environmental protection and biodiversity.
- Support for Scientific Research: MNE RK can fund and support scientific research related to biodiversity and ecology.
- Cooperation with International Organizations: MNE RK can work with international partners and organizations to develop and implement biodiversity conservation solutions.
- Education and Awareness: MNE RK can support educational programs and information campaigns to raise awareness about the importance of biodiversity.

MNE RK undertakes activities to determine the status and trends of biodiversity financing at the national level. Its interest in biodiversity financing is direct but minimal (scale of 1). This assessment does not indicate

a lack of **interest** in biodiversity conservation but is based on the prioritization of the agency's tasks: urgent socio-economic tasks take precedence over biodiversity issues.

The MNE RK has a direct **influence** on financing through strategic planning and budget formation (scale of 4).

Ministry of Finance of the Republic of Kazakhstan

MF RK is the central executive body of the Republic of Kazakhstan, providing management and intersectoral coordination in the financial sector of the Republic of Kazakhstan. The following committees are part of the Ministry of Finance:

- Committee of Internal State Audit;
- Treasury Committee;
- Committee of State Property and Privatization;
- State Revenue Committee.

Key aspects of the Ministry of Finance's activities are:

Management and Coordination: MF RK provides management and coordination in the financial sector as stipulated by law. It develops and implements legislative acts aimed at managing finances and budgetary resources.

Budget and Finance: MF RK participates in forming the state budget and controls its execution. It deals with taxation, public procurement, debt policy, and other aspects of financial activities.

Financial Monitoring and Anti-Money Laundering: MF RK develops rules and mechanisms for financial monitoring to prevent the legalization (laundering) of illicit income and terrorism financing.

Open Data and Information Resources: MF RK provides open data, including information on the budget, public procurement, financial reporting, and other materials.

MF RK is not a sectoral body but is crucial in financing biodiversity through the development of budget policies and mechanisms that ensure the allocation of funds for nature and ecosystem conservation. MF RK's interest in biodiversity financing is determined by the priority of programs and projects in the overall agenda, depending on the tasks set by the Government of the Republic of Kazakhstan (scale of 1).

MF RK can also participate in developing tax incentives for organizations that contribute to biodiversity conservation and can exert influence and leverage on policy (scale of 4).

Ministry of Justice of the Republic of Kazakhstan

MJ RK provides legal support to the state, maintains a regime of legality in the work of state bodies, organizations, officials, and citizens, and ensures the protection of the rights and legitimate interests of citizens and organizations.

MJ RK does not engage in biodiversity financing but plays an essential role in developing and approving legal norms aimed at biodiversity conservation and development.

MJ RK has no **interest** in biodiversity financing (scale of 1).

MJ RK has **influence** over budget approval, on which biodiversity financing depends (scale of 4).

Ministry of Water Resources and Irrigation of the Republic of Kazakhstan

MWRI RK is a state body responsible for leading the formation and implementation of state policy, and coordinating management processes in the areas of control over the use and protection of water resources, water supply, sewerage, and irrigation.

While MWRI RK is not a direct expert in biodiversity financing, it plays an important

role in developing and implementing financial mechanisms related to nature conservation and biodiversity. As part of the Comprehensive Plan for Water Management Development for 2024-2030, MWRI RK plans to build new reservoirs, reconstruct existing ones, and improve irrigation systems. This can contribute to financing biodiversity-related projects.

MWRI RK actively collaborates with other bodies and international partners to develop and implement solutions for the sustainable use of water resources, including measures to increase water use efficiency and adapt to climate change.

Additionally, MWRI RK manages water resources and transitions to sustainable development. As part of this work, budget programs aimed at effective water resource management and improving irrigation and drainage systems have been implemented.

Here are several ways the MWRI RK can influence biodiversity:

Protection of Water Ecosystems: The MWRI RK develops and implements policies and measures to protect water ecosystems, such as rivers, lakes, and reservoirs. This includes controlling water pollution, protecting shore-lines, and restoring natural water habitats.

Regulation of Water Resources: The MWRI RK sets standards and rules for the use of water resources, which may include restrictions on water extraction, permits for the use of water bodies, and water use monitoring.

Monitoring and Research: The MWRI RK monitors the state of water resources and their impact on the environment. This helps identify threats to biodiversity and take appropriate measures.

Water Pollution Control: The MWRI RK monitors water quality and takes measures to prevent the pollution of water bodies, which is important for the health of aquatic organisms and their habitats.

Irrigation and Agriculture: The MWRI RK participates in developing strategies for the efficient use of water in agriculture, which affects land ecosystems and biodiversity. Balanced irrigation helps preserve natural biotopes.

Currently, the MWRI RK is not an expert on biodiversity financing issues but it plays an important role in managing water resources, which directly affects biodiversity. Given that water issues are a key concern for Kazakhstan, not only for future development but also for national security, the Ministry has a direct **interest** in biodiversity financing (scale of 4).

The MWRI RK's **influence** on biodiversity financing is limited (scale of 2).

Ministry of Tourism and Sports of the Republic of Kazakhstan

MTS RK provides management, intersectoral coordination, and state regulation in the fields of tourism, physical culture, and sports. The MTS RK includes:

- Committee of Tourism Industry;
- Committee for Sports and Physical Culture.

The MTS RK actively contributes to the conservation of natural resources and biodiversity through its activities:

1. **Development of Sustainable Ecotourism:** Supports projects aimed at developing ecotourism in nature reserves and national parks. This helps preserve natural ecosystems, rare species of animals and plants, and promotes regional economic growth and employment.
2. **Protection of Natural Areas:** Collaborates with organizations involved in nature conservation to ensure the sustainable use of natural resources and biodiversity protection.
3. **Promotion of Environmental Awareness:** Conducts educational campaigns and events to raise awareness about the importance of biodiversity and the need for its preservation.

MTS RK's interest in biodiversity financing lies in the fact that the conservation and sustainable use of biological resources contribute to the development of ecological tourism and attracting tourists (scale of 3).

MTS RK cannot influence biodiversity financing as a standalone body but can have an impact as a co-initiator of reforms related to biodiversity financing, for example, in cooperation with the MENR RK of the Republic of Kazakhstan (scale of 3).

Ministry of Agriculture of the Republic of Kazakhstan

MA RK is a state body responsible for management in the agro-industrial complex, irrigated agriculture and land reclamation, land resources, and intersectoral coordination of state bodies within its competence as provided by law. MA RK includes:

- Committee of Fisheries;
- Committee of State Inspection in the Agro-Industrial Complex;
- Committee of Veterinary Control and Supervision;
- Committee of Land Resources Management.

MA RK is an industry body actively involved in implementing state programs and projects aimed at biodiversity conservation and has a direct **interest** in its financing. However, some tasks of the ministry are contrary to the interests of biodiversity (scale of 2).

The **influence** of MA RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 3).

Ministry of Energy of the Republic of Kazakhstan

MEN RK forms and implements state policy, and coordinates management processes in the oil and gas, petrochemical industry, hydrocarbon transportation, uranium extraction, state regulation of petroleum product production, gas and gas supply, main pipeline, electric power, heat supply, in terms of combined heat and power plants and boilers producing thermal energy in the centralized heat supply zone, atomic energy, and the development of renewable energy sources. MEN RK includes the Committee of Atomic and Energy Supervision and Control.

MEN RK has minimal **interest** in biodiversity financing (scale of 1).

The **influence** of MEN RK on biodiversity financing is minimal (scale of 1).

Ministry of Industry and Construction of the Republic of Kazakhstan

MIC RK is a state body that provides management in the areas of industry and industrial development; industry; mining and metallurgical complex; domestic value development; mechanical engineering; coal, chemical, light (except for the processing of skins and wool of agricultural animals), woodworking, and furniture industry; construction industry and building materials production; machinery and equipment safety; chemical product safety in accordance with the sectoral orientation; control of specific goods; energy saving and energy efficiency improvement; regulation of the production of precious metals and the circulation of precious metals and stones; raw materials containing precious metals; jewelry and other products; creation, functioning, and abolition of special economic zones; state management of subsoil use in terms of solid minerals, excluding uranium mining; state geological study of subsoil, reproduction of the mineral resource base; architectural, urban planning, and construction activities; housing relations; public utilities; state regulation in the field of water supply and sanitation, heat supply (except for combined heat and power plants and boilers producing thermal energy in the centralized heat supply zone) within settlements; shared participation in housing

construction; defense industry; participation in the implementation of a unified military-technical policy; implementation of military-technical cooperation; in the field of formation, placement, and fulfillment of the state defense order.

MIC RK includes:

- Committee of State Defense Order;
- Committee for Construction and Housing and Communal Services;
- Committee of Industry;
- Committee of Geology.

MIC RK is not the main body responsible for biodiversity, so the MIC RK's **interest** in biodiversity financing is limited to participation in joint projects and programs with other departments and organizations (scale of 2).

The **influence** of MIC RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 2).

Ministry of Trade and Integration of the Republic of Kazakhstan

MTI RK is responsible for the development and promotion of exports of non-primary goods and services, as well as the development and regulation of domestic trade. Its competencies also include improving trade infrastructure, developing exchange and electronic commerce, protecting consumer rights, technical regulation, standardization, and ensuring measurement unity.

MTI RK includes:

- Committee on Technical Regulation and Metrology;
- Committee on Consumer Rights Protection and Trade Committee.

Although the primary functions of MTI RK are not directly related to biodiversity, some aspects of its activities can indirectly affect the environment. For example:

Export and import: MTI RK can promote the export of goods that may impact biodiversity. This can include promoting environmentally friendly goods or restricting the export of goods that could negatively impact nature.

Standardization and technical regulation: MTI RK develops standards and regulations that can affect the production and use of goods. This may include standards for safety, environmental compatibility, and other aspects related to biodiversity.

Trade infrastructure: The development of trade infrastructure can influence the availability of environmentally friendly goods and sustainable business practices.

MTI RK is not the main body responsible for biodiversity, so its **interest** in biodiversity financing is limited to participation in joint projects and programs with other departments and organizations (scale of 2).

The **influence** of MTI RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 2).

Ministry of Emergency Situations of the Republic of Kazakhstan

MES RK is the central executive body of the Republic of Kazakhstan that provides management in the areas of prevention and liquidation of natural and man-made emergencies, civil defense, fire and industrial safety, formation and development of the state material reserve, ensuring the functioning and further development of the state civil protection system, and organization of fire prevention and extinguishing.

MES RK includes:

- Committee on Civil Defense and Military Units;
- Committee on Fire Service;
- Committee on Industrial Safety;
- Committee on State Material Reserves.

MES RK plays an important role in ensuring the safety and sustainability of the country, but its impact on biodiversity is not direct. Let's consider how the MES RK can indirectly affect biodiversity:

Prevention and response to emergencies: MES RK deals with the prevention and liquidation of emergencies such as fires, floods, earthquakes, and other natural disasters. This helps preserve natural ecosystems and animals that may be affected by such events.

Nature protection during emergencies: During emergencies, MES RK takes measures to protect nature. For example, during forest fires, they organize the evacuation of animals from danger zones and take measures to prevent the spread of fire and protect natural resources.

Cooperation with other bodies and organizations: MES RK can cooperate with other bodies, such as the Kazakhstan Association for the Conservation of Biodiversity (KACB), to develop strategies for nature and biodiversity conservation.

Education and awareness: MES RK can conduct training programs and campaigns to raise awareness about the importance of biodiversity and environmental sustainability.

MES RK is not the main body responsible for biodiversity, so its **interest** in biodiversity financing is limited to participation in joint projects and programs with other departments and organizations (scale of 2).

The **influence** of MES RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 2).

Ministry of Science and Higher Education of the Republic of Kazakhstan

MSHE RK is a government body responsible for management in higher and postgraduate education, language policy, science, quality assurance in the field of science, higher and postgraduate education, and the digitalization of science, higher and postgraduate education.

MSHE RK includes:

- Committee on Higher and Postgraduate Education;
- Committee on Quality Assurance in the Field of Science and Higher Education;
- Committee on Science;
- Committee on Language Policy.

MSHE RK has the potential to train personnel with the skills and knowledge required for effective management and conservation of biodiversity. Here are some categories of personnel needed to work in the field of biodiversity in Kazakhstan:

1. **Ecologists and biologists:** Specialists in ecology, biology, and zoology can conduct research, monitoring, and assessment of the state of natural ecosystems and species.
2. **Foresters and nature conservationists:** These specialists manage natural areas, protect animals and plants, and enforce regulations in reserves and national parks.
3. **Geographers and geographic information specialists:** They assist in spatial data analysis, cartography, and land use planning with biodiversity considerations.
4. **Education and public activity specialists:** They conduct educational programs and inform the public about the importance of biodiversity and conservation measures.
5. **Environmental protection and sustainable development specialists:** They develop strategies and policies in the field of nature conservation and biodiversity.

MSHE RK is not the main body responsible for biodiversity, so its **interest** in biodiversity financing is limited to participation in joint projects and programs with other departments and organizations (scale of 2).

The **influence** of MSHE RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 2).

Ministry of Education of the Republic of Kazakhstan

ME RK is a government body that provides management in preschool, secondary, technical and vocational, post-secondary education, additional education, and the protection of children's rights, as well as quality assurance in the field of preschool, secondary, technical and vocational, post-secondary education.

ME RK includes:

- Committee on Secondary Education;
- Committee on Quality Assurance in Education;
- Committee on the Protection of Children's Rights.

ME RK is a government body responsible for management in the fields of education. Although its primary functions are not directly related to biodiversity, some aspects of its activities can indirectly affect biodiversity:

Education and information: ME RK can conduct educational programs that raise students' awareness of the importance of nature conservation and biodiversity.

Integration into educational programs: Including topics related to ecology, biology, and nature conservation in curricula can contribute to the formation of an ecological culture among students.

ME RK is not the main body responsible for biodiversity, so its **interest** in biodiversity financing is limited to participation in joint projects and programs with other departments and organizations (scale of 2).

The **influence** of ME RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 2).

Ministry of Digital Development, Innovations and Aerospace Industry of the Republic of Kazakhstan

MDDIAI RK is responsible for the formation and implementation of state policy in the field of digital technologies, innovation activities, communications, the provision of public services, the electronic industry, as well as the development of electronic government, coordination of the activities of the "Government for Citizens" Corporation, information security, aerospace industry, geodesy, and cartography.

MDDIAI RK includes:

- Committee on Telecommunications;
- Committee on Public Services;
- Committee on Geodesy and Cartography;
- Committee on Information Security;
- Aerospace Committee.

The main functions of MDDIAI RK are not directly related to biodiversity conservation, but some aspects of its activities can have an indirect impact on nature:

Defense, aerospace, and electronic industry: MDDIAI RK is involved in the development of the aerospace sector. The introduction of modern technologies in this area can contribute to improved monitoring of natural resources and biodiversity conservation, which impacts biodiversity, for example, in the field of satellite communication and environmental monitoring.

Information security and communication: MDDIAI RK is responsible for information security issues. This includes the protection of data on nature and biodiversity. MDDIAI RK also deals with information security in the field of informatization and communications (cybersecurity).

MDDIAI RK is not the main body responsible for biodiversity, so its **interest** in biodiversity financing is limited to participation in joint projects and programs with other departments and organizations (scale of 2).

The **influence** of MDDIAI RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 2).

Ministry of Internal Affairs of the Republic of Kazakhstan

MIA RK is the central executive body of the Republic of Kazakhstan, which provides management to the system of internal affairs bodies of the Republic of Kazakhstan and, within the framework provided by legislation, intersectoral coordination in the field of combating crime, maintaining public order, and ensuring public safety.

MIA RK includes:

- National Guard of the Republic of Kazakhstan;
- Administrative Police Committee;
- Migration Service Committee;
- Penal System Committee.

MIA RK plays an important role in ensuring security and order in the country, but its influence on biodiversity is not always directly related to nature conservation. Here are a few ways MIA RK can influence biodiversity:

Combating illegal activities: MIA RK prevents illegal wildlife extraction, smuggling of animals and plants, and other crimes that can negatively affect biodiversity.

Cooperation with other bodies: MIA RK can cooperate with other government bodies, such as the MENR RK, to develop and implement conservation measures.

Education and information: MIA RK can conduct educational programs and inform the public about the importance of nature conservation and biodiversity.

MIA RK is not the main body responsible for biodiversity, so its **interest** in biodiversity financing is limited to participation in joint projects and programs with other departments and organizations (scale of 2).

The **influence** of MIA RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 2).

Ministry of Foreign Affairs of the Republic of Kazakhstan

MFA RK is the state body of the Republic of Kazakhstan, which provides overall management in the field of foreign policy activities and heads the unified system of diplomatic service bodies of the Republic of Kazakhstan, as well as in the field of implementing state policy on attracting investments.

MFA RK includes:

- Committee on Investments;
- Committee on International Information.

MFA RK is responsible for the country's foreign policy and interaction with other states. The direct influence of MFA RK on biodiversity is very limited, but some aspects of its activities can indirectly affect nature:

International cooperation: MFA RK participates in international negotiations and agreements that may concern nature conservation and biodiversity, such as cooperation on climate issues, water resource protection, and biodiversity under the Convention on Biological Diversity.

Diplomatic relations: MFA RK can support diplomatic relations with other countries, promoting the exchange of experiences and knowledge on best practices in nature conservation.

Support for international initiatives: MFA RK can support international initiatives aimed at preserving biodiversity, such as the creation of reserves, protection of vulnerable species, and combating illegal trade in animals and plants.

MFA RK is not the main body responsible for biodiversity, so its **interest** in biodiversity financing is limited to participation in

joint projects and programs with other departments and organizations (scale of 2).

The **influence** of MFA RK on biodiversity financing is limited by the existing legislation of the Republic of Kazakhstan (scale of 2).

Ministry of Transport of the Republic of Kazakhstan

MT RK is the state body of the Republic of Kazakhstan responsible for management in the fields of railway, automobile, and inland water transport; merchant shipping; the use of the airspace of the Republic of Kazakhstan and the activities of civil and experimental aviation; natural monopolies in the field of air navigation and airport services; publicly significant markets in the field of airport services; and automobile roads.

The influence of MT RK on biodiversity is not immediately obvious. MT RK, in its activities to preserve biodiversity, should adhere to the following principles:

- Not to carry out activities in specially protected natural areas;
- Conduct risk assessments when working in ecologically sensitive areas;
- Apply a hierarchy of measures to mitigate impacts on biodiversity;
- Participate in research programs and industry partnerships.

The MT RK has no **interest** or **influence** on biodiversity financing (scale of 1).

Ministry of Labor and Social Protection of Population of the Republic of Kazakhstan

MLSPP RK provides leadership in the social and labor spheres, as well as in population migration. MLSPP RK includes:

- Migration Committee;
- Labor and Social Protection Committee.

MLSPP RK has no interest or influence on biodiversity financing (scale of 1).

Ministry of Culture and Information of the Republic of Kazakhstan

MCI RK is a state body of the Republic of Kazakhstan that provides management in the fields of information, interaction between the state and civil society, religious activities, state youth and family policy, modernization of public consciousness, charity, volunteerism, mediation, ensuring domestic political stability, interfaith and interethnic harmony, and, within the framework provided by legislation, intersectoral coordination and state regulation. MCI RK includes:

- Committee on Civil Society Affairs;
- Committee on Archives, Documentation, and Book Publishing;
- Committee on Culture.

The direct influence of MCI RK on biodiversity is not immediately apparent.

MCI RK influences biodiversity through the implementation of state programs and strategies in the fields of information, interaction between the state and civil society, religious activities, youth and family policy, and modernization of public consciousness.

MCI RK can engage in biodiversity initiatives through cinema, television, book publishing, cartoons, and promotion of youth trends via social media.

MCI RK has no **interest** or **influence** on biodiversity financing (scale of 1).

Ministry of Defense of the Republic of Kazakhstan

MD RK implements state policy in defense, military-political and military-economic management of the Armed Forces of the Republic of Kazakhstan, and is the authorized body in the field of state aviation.

MD RK can exert indirect influence on biodiversity through:

Military exercises: Military activities can impact the environment, including soil degradation, pollution of water resources,

and disruption of ecosystems. MD RK may develop strategies to minimize negative environmental impacts during military exercises.

Use of territories: Military bases and facilities of MD RK occupy specific territories. Managing these territories can affect biodiversity, including the conservation of natural resources and protection of animals and plants.

Cooperation with other agencies: MD RK can collaborate with other government agencies, such as the MENR RK, to develop and implement measures for nature conservation and biodiversity.

Education and information: MD RK can conduct educational programs for military personnel on the importance of nature conservation and biodiversity.

MD RK has no **interest** or **influence** on biodiversity financing (scale of 1).

Ministry of Health of the Republic of Kazakhstan

MH RK provides leadership in public health protection, medical and pharmaceutical science, medical and pharmaceutical education, regulation of medicines, medical devices and equipment, quality control of medical services, sanitary-epidemiological well-being of the population, and control and supervision of compliance with requirements established by technical regulations and normative documents, as well as in the field of food safety during its implementation stage.

MH RK includes:

- Committee on Medical and Pharmaceutical Control;
- Sanitary-Epidemiological Control Committee.

MH RK has no **interest** or **influence** on biodiversity financing (scale of 1).

11. Review of priority institutions and development of stakeholder engagement plan

The priority institution in the interests of biodiversity is MENR RK.

Strategy for interaction with the **MENR RK**:

An exhaustive list of tasks and functions of MENR RK is set out in the Regulations on this ministry, approved by Decree of the Government of the Republic of Kazakhstan dated July 5, 2019 No. 479.

Currently, the Regulations on the Ministry of Ecology and Natural Resources contain only 4 functions that mention biodiversity (hereinafter, the numbering of subparagraphs of paragraph 15 of the Regulations is indicated):

Subclause 156: makes proposals to the Government of the Republic of Kazakhstan for approval of the list of international and state organizations, non-governmental organizations and foundations providing grants for the conservation of biodiversity and the development of specially protected natural areas;

Subclause 267: develops and approves a list of international and state organizations, non-governmental organizations and foundations that provide grants for the conservation of biodiversity and the development of specially protected natural areas;

Subclause 360: develops and approves rules for implementing compensation for biodiversity loss;

Subclause 664-14: based on the conclusions of the competent national authorities, issues permits for access to genetic resources on the territory of the Republic of Kazakhstan and their removal from the territory of the Republic of Kazakhstan in accordance with Convention on Biodiversity and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to this Convention.

Accordingly, what is not enshrined in the functions of a state body is not reflected in the activities it carries out, it is difficult to allocate funding for these issues, and none of the officials bears personal responsibility for these functions.

Table 13 - Structure of the MENR RK with comments and recommendations for building interaction:

No.	Structural subdivision	Comments and recommendations
1	Forestry and Wildlife Committee	The key department of the **MENR RK**, which is responsible for the most significant aspects of biodiversity: forestry, issues of protection, reproduction and use of wildlife, issues of specially protected natural areas.
2	Committee for Environmental Regulation and Control	It is recommended to use a similar approach, tested within the framework of anti-corruption examination of regulatory legal acts. It is necessary to form a pool of independent environmental experts who will conduct an external independent examination of projects submitted for state environmental assessment for the long-term environmental consequences of the planned activity, with an emphasis on biodiversity issues. The rules for organizing and conducting scientific examination, as well as the selection of scientific experts, were approved by the joint order of the MJ RK dated July 11, 2023 No. 473, acting. MNE RK dated July 12, 2023 No. 135 and Chairman of the Agency of the Republic of Kazakhstan for Anti-Corruption (Anti-Corruption Service) dated July 11, 2023 No. 223. These rules and the procedure for selecting scientific experts can be used as a template for similar rules for conducting scientific environmental assessments of risks to biodiversity.
3	Press service	The press service analyzes and monitors the information space, develops a set of measures aimed at creating a positive image and reputation of the Ministry and maintaining public loyalty. The more the press service is supplied with information on the topic of biodiversity, the more specialists of the press service are immersed in the topic of biodiversity, the more this topic falls into the information agenda of the Ministry. It is necessary to establish a mechanism that ensures the continuous involvement of the press service in biodiversity-related activities and training.

No.	Structural subdivision	Comments and recommendations
4	Department of Environmental Policy	Key department responsible for developing state environmental policy. The level of awareness of the specialists of this department about the tasks of biodiversity directly determines the success of including projects and initiatives in the work plan of the Ministry, in the legislative work plan, and in the agenda of meetings. It is recommended to conduct training on the topic of biodiversity for representatives of this department to explain the value of biodiversity for environmental policy. It is recommended to provide this department with ready-made analytical information and infographics on biodiversity issues, including in the state (Kazakh) language. The finished material is more likely to be used by department specialists in their work.
5	Waste Management Department	Indirect involvement in biodiversity conservation issues.
6	Climate Policy Department	Indirect involvement in biodiversity conservation issues.
7	Internal Audit Department	Carries out purely internal tasks of the Ministry.
8	Department of International Cooperation	The department is responsible for interaction with foreign states and international organizations. This department is particularly receptive to biodiversity-related initiatives and proposals. It is recommended that the department be involved in advance in international projects, seminars and conferences on the topic of biodiversity. This measure will ensure the "infiltration" of biodiversity topics into the work agenda of the ministry.
9	Digital Transformation Department	Carries out purely internal tasks of the Ministry. It is recommended to promote through this department tasks related to the digitalization of key aspects of the ministry's activities, on which the collection of high-quality analytical information on the state of biodiversity depends. It is recommended to develop, finance and support the implementation of IT solutions in the field of monitoring and analysis of the state of biodiversity.
10	Department of Administrative Work	Carries out purely internal tasks of the Ministry.
11	HR department	The Department forms a unified personnel management system of the Ministry, ensures the processes of personnel passing the civil service, develops corporate culture, conducts personnel training, evaluates and analyzes the effectiveness of the activities of the structural divisions of the Ministry. It is recommended to build systematic and long-term work with the department on issues: Assessment of awareness of biodiversity issues among employees of the Ministry (it is desirable to include biodiversity issues in the list of questions that are posed to newly hired employees when hiring). Regular training of ministry employees on biodiversity issues in the most interactive, interesting and easy form.

No.	Structural subdivision	Comments and recommendations
12	Department of State Asset Management and Budget Policy	Coordination and methodological guidance in the field of budgetary relations, public procurement, budget and accounting in the execution of the republican budget, as well as financial reporting of the Ministry and ensuring the formation and implementation of activities in the field of public procurement. This department plays a significant role in addressing biodiversity financing issues. Systematic work is recommended to involve department specialists in events that raise awareness of biodiversity issues, since the success of promoting issues and initiatives related to biodiversity financing directly depends on this.
13	Department of Strategic Planning and Analysis	It is up to this department to implement initiatives related to biodiversity financing into the operational and strategic plan of the Ministry. It is recommended to provide expert assistance to the department for the analytical processing of information related to biodiversity. The greater the amount of ready-made analytical information translated into the state (Kazakh) language at the disposal of this department, the greater the chances will be for including biodiversity issues on the agenda of the Ministry's activities, in key documents, and in management speeches.
14	Legal Service Department	Carries out purely internal tasks of the Ministry. They play a significant role in coordinating draft documents related to biodiversity. The more department employees are aware and immersed in the topic of biodiversity, the easier it will be to approve draft documents.

Table 14 - Recommendations for a general strategy for interaction with government agencies of the Republic of Kazakhstan in the interests of biodiversity

	Tools, approaches	Description
1	Organization and holding of a thematic round table in the Mazhilis and the Senate of the Parliament of the Republic of Kazakhstan on issues of biodiversity conservation	For example, on November 18, 2016, Parliamentary hearings were held on the topic "Topical issues of legislative support for the conservation of biological diversity in the Republic of Kazakhstan." It is recommended that such events be held on a regular basis. This event provides: - awareness of the decision makers about biodiversity issues and challenges; - increasing the priority of biodiversity-related tasks in government bodies, since the topic is included in the discussion agenda of Parliament, whose deputies have the right to ask questions directly to the top management of ministries; - creation of documents with instructions addressed to government bodies, in which tasks in the field of biodiversity can be implemented.

	Tools, approaches	Description
2	Organization and holding of discussions at the dialogue platforms of the Public Chamber under the Mazhilis of the Parliament of the Republic of Kazakhstan, on the basis of the MIND dialogue platform of the largest private university in Astana (Maqsut Narikbayev University) with the invitation of representatives of the most significant government bodies	As of 2024, these sites have the unofficial status of "think tanks" for the AP RK, Parliament and Government. Materials and recommendations developed at these sites have a high priority for decision makers.
3	Elaboration of the participation of the President of the Republic of Kazakhstan in the activities of top-level international events where biodiversity issues are addressed. Working out a visit of representatives of international organizations to Kazakhstan and working out a meeting with the President of the Republic of Kazakhstan in order to discuss strategic initiatives in the field of biodiversity	This measure ensures that strategic decisions important for biodiversity are made, bypassing the bureaucratic apparatus of the Government. The likelihood of priority financing of such initiatives from the state budget is ensured.
4	Building long-term and systematic work with the MCI RK	It is necessary to develop and approve a joint action plan for outreach and promotion of biodiversity conservation among the general population using government media. It is desirable to focus on three tasks: - explanation in an accessible form of the meaning of the word "biodiversity" - explanation in an accessible form of the economic and practical significance of biodiversity, demonstration of the role of biodiversity for the interests of an individual citizen; - search and expression of biodiversity objectives through the cultural traditions and customs of the Kazakh people in order to convey the importance of biodiversity through the "cultural code" of the nation.
5	Building long-term and systematic work with the Academy of Public Administration under the President of the Republic of Kazakhstan	The economic and strategic value of biodiversity should be included in the training of political government officials. This measure will have the most widespread and sustainable effect on the political and institutional support of biodiversity interests in Kazakhstan.

The recommendations outlined above are necessary to build the basis of a political and institutional platform for the topic of biodiversity in Kazakhstan.

V. SUMMARY OF KEY RECOMMENDATIONS

General conclusions and recommendations

Systemic issues in funding and advancing biodiversity objectives in Kazakhstan stem from the absence of a national biodiversity conservation strategy and the lack of mention of biodiversity goals in high-level state planning documents.

Concentrating efforts on these two areas would be the most effective use of resources for achieving long-term sustainable change.

Legal and policy recommendations

A fundamentally new understanding of the concept of "biodiversity" is needed, tailored to the current socio-economic realities of Kazakhstan. The next step should involve a more focused and precise definition of "biodiversity" within the Environmental Code of the Republic of Kazakhstan.

Subsequently, tools for inventory, monitoring, protection, compensation for biodiversity loss, and restoration should be embedded in sectoral laws and regulations, aligning with the definitions, principles, and objectives established in the Environmental Code.

It is recommended to strategically develop a vision and approaches to working with the regulatory framework, to work with key government stakeholders based on an analysis of key sectors of the economy according to the classification of the Bureau of National Statistics of Kazakhstan. Above, experts conducted a basic analysis of the impact of biodiversity on specific sectors of the economy. Continuation and expansion of this analysis will allow us to operate with facts and justifications that are significant for government institutions.

Changes in sector policy and practice that will help reduce biodiversity losses and/or improve biodiversity financing

The most effective measure will be to solve two key problems:

1) specification of requirements for assessing the impact of planned activities on biodiversity followed by specific measures for biodiversity conservation and restoration. This can be achieved by amending and supplementing the Environmental Code of the Republic of Kazakhstan, the Instructions for Organizing and Conducting Environmental Assessment (approved by the Minister of Ecology, Geology, and Natural Resources of the Republic of Kazakhstan on July 30, 2021, No. 280), and the Rules for Biodiversity Loss Compensation (approved by the Minister on May 19, 2021, No. 151).

2) Aggregated national and regional analytical data on biodiversity status, the impact of all new projects on biodiversity, which are subject to public hearings, and documented biodiversity damage. This consolidated information should be made available in a new separate section, "Biodiversity," on the "Unified Environmental Portal" – https://ecoportal.kz/.

Institutional/organizational and capacity building recommendations

It is recommended to integrate biodiversity-related objectives across the full range of national strategies, including those where a direct connection to biodiversity may not be immediately evident. For example, promoting biodiversity conservation within the framework of the concept of cinematography development in Kazakhstan.

A good example is the Concept for the Development of the Transport and Logistics Potential of the Republic of Kazakhstan until 2030, which outlines key objectives in terms of biodiversity interests. However, it should be noted that this Concept requires further refinement to specify the proposed measures and mechanisms.

Formation of a project office under the MENR RK on issues of conservation and financing of biodiversity.

Notes on the potential of existing financing solutions

The existing instrument of directing 100% of collected fines for violations of environmental legislation for the purpose of environmental protection has the opposite motivation – the state is interested in an increase in violations of environmental legislation, and a reduction in violations entails a deterioration in the financing of environmental problems. At the same time, it is necessary to allocate a separate expense item for biodiversity issues.

Opportunities for improving the budgeting and planning process

At the current stage of biodiversity management in Kazakhstan, issues with planning and budgeting extend beyond the budgeting and planning process itself. For example, the MF RK declines to approve biodiversity funding requests from the MENR RK not due to flaws in the budget process but due to institutional factors outlined in this report – such as a fundamental lack of understanding of the concept and economic value of "biodiversity," the absence of biodiversity objectives in high-level government planning documents, and similar issues.

APPENDIX

A detailed review of strategic planning documents of the Republic of Kazakhstan through the prism of biodiversity

1. Strategy "Kazakhstan-2050": A New Political Course of the Established State[4]

Announced by the Leader of the Nation N. A. Nazarbayev in the President's Address to the People of Kazakhstan, Astana, December 14, 2012**

According to the Address, rethinking the attitude towards natural wealth is one of the ten challenges of the 21st century. Quote: "In the context of the limited and depleting natural resources of the Earth, the unprecedented growth in human consumption will fuel various positive and negative processes.

Our country has several advantages here. The Almighty has endowed us with abundant natural wealth. Other countries and peoples will need our resources.

It is fundamentally important for us to rethink our attitude towards our natural wealth. We must learn to manage them properly, accumulating income from their sale in the treasury, and most importantly, transform the natural wealth of our country into sustainable economic growth as efficiently as possible."

Unfortunately, the document does not reveal the critical value of biodiversity. Natural resources are mentioned in a narrow utilitarian sense as objects of trade or industrial use.

Accordingly, the entire system of state planning does not consider biodiversity as the basis for socio-economic well-being.

The high-level task of the Strategy is for Kazakhstan to enter the top 30 most developed countries in the world by 2050.

However, the Strategy does not mention that the level of a country's development is assessed through an ecological lens, based on its role in decarbonizing the economy, many other important aspects related to the environment, as well as the level of compliance with the goals and objectives of biodiversity conservation.

Without a radical revision of the mindset regarding biodiversity, the implementation of the Strategy in terms of natural resources is not possible as of 2023.

2. "National Priorities of the Republic of Kazakhstan until 2025" approved by the Decree of the President of the Republic of Kazakhstan dated February 26, 2021 No. 520[5]

The Decree defines the following National Priorities: citizen well-being, quality of institutions, and a strong economy.

For each direction, several tasks are provided, including:

- Fair social policy;
- Accessible and effective healthcare system;
- Quality education;
- A fair and effective state protecting the interests of citizens;

[4] https://adilet.zan.kz/rus/docs/K1200002050

[5] https://adilet.zan.kz/rus/docs/U2100000520

- A new model of public administration;
- Cultivating values of patriotism;
- Strengthening national security;
- Building a diversified and innovative economy;
- Active development of economic and trade diplomacy;
- Balanced territorial development.

The Decree lacks any mention of environmental aspects, including biodiversity. Neither a favorable environmental state nor biodiversity conservation is reflected in the National Priorities until 2025.

Unfortunately, this directly affects the nature of all subsequent documents and actions taken by the Parliament and Government of the Republic of Kazakhstan.

According to the Decree, the first National Priority is designated as "Citizen Well-being," which is impossible without biodiversity conservation. However, the document itself does not link citizen well-being with the quality of the environment and biodiversity.

3. "National Development Plan of the Republic of Kazakhstan until 2025" approved by the Decree of the President of the Republic of Kazakhstan dated February 15, 2018 No. 636[6]

The National Development Plan of the Republic of Kazakhstan replaced the "Strategic Development Plan of the Republic of Kazakhstan until 2025."

Unfortunately, the new document does not include deep and radical reforms. It simply repeats all the old slogans with minor cosmetic changes.

In the Decree, improving the quality of education and cultivating values of patriotism are designated as national priorities.

Improving the quality of education should be implemented by taking measures to educate schoolchildren and students on environmental protection, increasing their level of knowledge about environmental conservation, and instilling environmental values.

Cultivating values of patriotism should be realized through developing environmental culture among citizens through the lens of careful treatment of nature, principles of animal protection, and support for environmental organizations.

Although the document does not disclose or use the term "biodiversity," it lays a favorable foundation for changing the environmental mindset paradigm of the country's citizens, which undoubtedly has the most systematic positive impact on the state of biodiversity.

Based on the outlined premises of the National Development Plan, measures should be implemented to change citizens' attitudes towards natural resources in general and its components in particular.

For example, within the framework of the National Development Plan and specific instructions from the President, the Law "On Responsible Treatment of Animals" was adopted in 2021, which is crucial for changing citizens' attitudes towards the animal world.

4. National Security Strategy of the Republic of Kazakhstan for 2021–2025

The full text is not publicly available. The source is a press release on the website akorda.kz dated June 21, 2021.

The Strategy defines the main priorities for strengthening national security. Among the priorities are environmental security, including not only ecosystem protection but also natural resource management. A special place is given to the country's water security, specifically preventing and minimizing the

[6] https://adilet.zan.kz/rus/docs/U1800000636

consequences of natural and man-made disasters.

The use of the term "ecosystem" in such a significant document indicates attention to biodiversity conservation.

However, it can be noted that currently, the value of biodiversity is considered exclusively through the lens of water security and water resources. Other components of biodiversity are not yet considered as the basis for socio-economic well-being.

Biodiversity is a critically important element of Kazakhstan's national security, as the country possesses a vast diversity of ecosystems and biological species. More than five percent of the country's land area is designated as protected natural areas. However, biodiversity is constantly under threat due to habitat destruction, rapid urbanization, and active mineral resource extraction.

In this Strategy, national security is currently linked only to the security and condition of water resources.

5. "Territorial Development Plan of the Republic of Kazakhstan until 2025" approved by the Decree of the President of the Republic of Kazakhstan No. 812 dated February 21, 2022[7]

The document is aimed at implementing the principle of "people to infrastructure" based on a system of regional standards, which involves the advanced development of infrastructure, including transport, social, communication, and energy.

Consider Direction 3 of the Decree. Water resources.

The problems of increasing water resource scarcity and surface water pollution will continue to negatively impact the development of certain sectors dependent on this specialized factor.

In addition to economic crises, the water crisis can lead to negative social and environmental consequences.

Further settlement of the population in urban and rural areas will be determined mainly by economic and environmental factors. Population concentration will continue in economic growth centers and places with favorable living conditions.

Like higher-level documents, this Plan does not use the term "biodiversity" and considers only the aspect of water resource problems. In particular, the dependence of certain economic sectors on the specialized factor of water scarcity is mentioned.

At the same time, the document directly states that internal migration is directly related to the quality of the environment, which can positively affect biodiversity financing at the level of local executive bodies.

The implementation of the Plan's goals and objectives directly depends on increasing public awareness of environmental protection. At the legislative level, it is necessary to communicate alarming facts related to the destruction of natural complexes, such as species loss, disruption of food chains, decreased ecosystem resilience, loss of ecosystem services, increased disease risk, deteriorating air and water quality, and loss of cultural and spiritual value. For a better understanding of this relationship, let's consider several examples, both obvious and less obvious.

For example, the critical deterioration of biodiversity components occurred in the city of Aralsk, located "on the coast" of the now almost lost Aral Sea. The region has potential for the development of various economic sectors, including glass production, soda, and other products. However, due to the critically poor environmental situation, there is a massive outflow of economically active population. Accordingly, there are no labor resources for the implementation of large investment projects. Thus, the socio-

[7] https://www.gov.kz/memleket/entities/economy/documents/details/279829?lang=ru

economic situation in the region represents a vicious circle.

A less obvious example could be the situation in the capital of Kazakhstan, the city of Astana. The rapid growth of housing construction stimulates internal migration and population growth in the capital. At the same time, construction growth leads to the direct destruction of natural components and biodiversity loss. A vivid example is the case of the destruction of the Taldykols wetlands system on the left bank (the new developing part of the capital), which could attract tourists and be a source of fresh air. The Kazakhstan Association for the Conservation of Biodiversity (KACB) states that around 200 bird species can be found at the Taldykols lake group, with about 60 species nesting. The vast majority of these birds are migratory, and Taldykols, besides being a nesting site, is also a stopover. Since Taldykols is on the global migration route, many birds find this place historically significant.

The destruction of such places will cause damage to the population, claim the KACB. Of the 200 species, about 12-16 are listed in the Red Book of Kazakhstan and international lists of rare birds. These include the whooper swan, flamingo, large godwit, and marbled teal. The future of the birds at the lake will depend on how much it will change during development. If everything goes as it is, it will lead to habitat degradation and their unsuitability for birds.

Scientists and experts in the field of ecosystem services have estimated that the Taldykol lake system provides the city with ecosystem services worth up to US$242 million a year[8]. These are the benefits that residents take for granted. Among them are clean air and its natural humidification, biodiversity conservation, environmental safety, cultural and historical potential, and regulatory functions such as protecting the city from floods. The authorities have removed the Small Taldykol lakes from the water fund. This means that officials are no longer obligated to preserve the biodiversity of the area. Lake defenders are demanding public hearings, but city authorities are ignoring their demands.

One of the large development projects on these wetlands is being implemented with funds from the Development Bank of Kazakhstan (the largest state development institution). Thus, the country's key financial resources are spent on projects that have the greatest negative impact on biodiversity. At the same time, the destruction of biodiversity in the wetlands of the Taldykol lake system does not entail immediate catastrophic consequences for human life. In this regard, there are no legal ways to stop, reduce or terminate such activities.

Perhaps in the future, using the example of analyzing the achievement or non-achievement of the goals and objectives of the Plan through the prism of biodiversity, it will be possible to show the importance of biodiversity.

6. "Green Economy Concept" approved by the Decree of the President of the Republic of Kazakhstan No. 577 dated May 30, 2013[9]

Currently, Kazakhstan is faced with the problem of serious deterioration of the state of natural resources and the environment in all the most important environmental indicators.

The most acute environmental problems in the Republic of Kazakhstan today are:

- **Problems of desertification and industrial soil pollution.**

Almost a third of agricultural land is now degraded or seriously threatened, and more than 10 million hectares of potentially arable land have been abandoned in the past.

[8] Utepov A., Jumabayev S., Skakova A. et al. The economic evaluation of water ecosystem services in urban planning in Nur-Sultan, Kazakhstan // Public Policy and Administration. – 2021. – Vol. 20, Issue 2. – P. 205-219

[9] https://adilet.zan.kz/rus/docs/U1300000577

• **Environmental problems of water resources. There is currently a projected shortfall of 13–14 billion m³ of sustainable water resources to meet economic needs by 2030.**

• **Radioactive, bacteriological and chemical pollution of the environment and industrial air pollution.**

Environmental pollution has a serious negative impact on human health. According to international studies, about 40 thousand children under 10 years of age have neurological disorders as a result of excessive exposure to lead. Kazakhstan is in second place in terms of total environmental pollution with organic substances among the countries of Central and Eastern Europe and Central Asia.

The number of cancer patients is growing in Kazakhstan. Over the past three years, their number has increased by 14%. The statistics are mainly influenced by poor ecology. Mostly industrial cities are at risk. There are 45 of these in Kazakhstan, whose residents, in addition to dust and smog, have to breathe hydrogen sulfide, arsenic, ammonia, and nitrogen dioxide.

Cities experience high levels of air pollution, with concentrations of particulate matter tens of times higher than in the European Union. Air pollution is estimated to cause up to 6,000 premature deaths a year.

• **Problems of accumulation of industrial and household waste.**

There is no integrated waste management system. 97% of municipal solid waste ends up in uncontrolled landfills and waste disposal sites that do not meet sanitary standards. Historical toxic and radioactive waste from industry is also a serious problem.

Lost benefits from poor natural resource management could amount to up to US$7 billion by 2030.

This Concept is the fundamental and earliest (within the period under analysis) document laying down conceptual approaches to the task of conserving biodiversity and the impact of biodiversity on social and economic indicators.

The Concept identified three key stages in the transition of the Republic of Kazakhstan to a "green economy":

• **2013–2020 – during this period, the main priority of the state was to optimize the use of resources and increase the efficiency of environmental activities, as well as the creation of "green" infrastructure;**

• **2020–2030 – on the basis of the formed "green" infrastructure, the transformation of the national economy will begin, focused on the careful use of water, encouraging and stimulating the development and widespread introduction of renewable energy technologies, as well as the construction of structures based on high energy efficiency standards;**

• **2030–2050 – transition of the national economy to the principles of the so-called "third industrial revolution", requiring the use of natural resources subject to their renewability and sustainability.**

The adoption and implementation of the Concept opened the way for discussions on key issues of biodiversity conservation at the highest level, and also became a precursor to the adoption of a number of regulatory legal acts important for biodiversity, including the new Ecological Code.

Considering the General approaches to the transition to a "green economy" in sectors such as "Reducing air pollution", "Conservation and effective management of ecosystems", "Waste management system Sustainable use of water resources", "Development of sustainable and highly productive agriculture", it can be argued that that biodiversity plays a fundamental role in the implementation of this Concept, although it does not use the term "biodiversity".

At the same time, it is obvious that most of the Concept's initiatives remained on paper

in declarative form. In this connection, it is obvious that serious revision and updating of this Concept is required.

7. "Concept for the Development of the Tourism Industry of the Republic of Kazakhstan for 2023–2029" approved by the Resolution of the Government of the Republic of Kazakhstan dated March 28, 2023 No. 262[10]

The Concept outlines the main target indicators and expected results. The implementation of a set of measures will allow increasing employment in the industry to 800,000 people and the growth of gross value added by more than 6 trillion tenge by 2029.

The global target set at the 10th Conference of the Parties to the Convention on Biological Diversity (2010, Japan) provides for the conservation of biodiversity by expanding protected areas to 17% of the total area of the world's terrestrial ecosystems. Including for the sustainable development of ecosystems, as accepted in global practice, the Protected Areas (PA) should be about 10–12%. As of 01.02.2024 the total amount of PA in Kazakhstan is 30.8 million hectares. This is 11.3% of the country's territory.

It should be noted that later (after the development of this Concept) new goals were defined – the Kunming-Montreal Global Biodiversity Framework contains 23 action-oriented global targets for urgent action for the decade until 2030. Among the new global goals, in the context of tourism development, it is important to pay attention to goal No. 1 "Planning and managing all areas to reduce biodiversity loss". It implies the following: "Ensure that all areas are covered by participatory, integrated and biodiversity-sensitive spatial planning and/or effective management processes that take into account land-use and sea-use changes in order to reduce to zero loss of areas with high biodiversity value, including ecosystems with high ecological integrity, by 2030, while respecting the rights of indigenous peoples and local communities." In the context of developing sustainable tourism in PAs, the most effective global experience in managing national parks is found in the USA, Australia, and Georgia.

In the context of developing ecological tourism in national parks in the country, work will continue to attract investments and preserve biodiversity based on the experience of the USA. The National Park Service (NPS) of the USA is a federal agency managing all national parks and national seashores of the country, many national monuments, as well as other protected and historical sites in the USA. They have a dual role – to preserve the ecological and historical integrity of the places entrusted to their management and to make them accessible for public use.

The Concept for the Development of the Tourism Industry of Kazakhstan pays attention to the development of ecological tourism in PAs (mainly in national parks) as a tool for preserving biodiversity.

Biodiversity is the foundation of the tourism industry. The Concept, unfortunately, considers biodiversity only in the context of PAs, while biodiversity throughout the country is crucial for increasing tourism potential.

Biodiversity does not have a short-term and immediate impact on the implementation of this document.

8. "Concept for the Development of Creative Industries for 2021–2025" approved by the Resolution of the Government of the Republic of Kazakhstan dated November 30, 2021 No. 860[11]

At the stage of developing the Concept, there is no single methodology in the world for determining industries related to

[10] https://adilet.zan.kz/rus/docs/P2300000262

[11] https://adilet.zan.kz/rus/docs/P2100000860

creative industries. According to the current approaches of the United Nations (UN), creative industries include 14 areas: design, art, fashion, cinema, music, media, computer graphics, education, and other areas based on intellectual activity.

According to the UNESCO report, creative industries are grouped into 9 major areas including visual arts (painting, sculpture, photography, antiques); publishing and print media (books, press, and other publications); design (interior, graphic, fashion, jewelry, toys); creative services (architecture, advertising, creative research and development); new media (software, video games, digital creative content); audiovisual arts (cinema, television, and broadcasting); performing arts (live music, theater, dance, opera, circus, and others); cultural traditions (crafts, festivals, and celebrations); cultural sites and landmarks (archaeological sites, museums, libraries, and others).

One of the principles on which the implementation of the Concept will be based is the principle of "ecological sustainability" based on ensuring the secondary use of creative products.

The document does not have a direct impact on biodiversity. However, at the global level, the development of creative industries does not contradict the environmental agenda but is closely integrated with it. Biodiversity can and should be part of the value system on which the state policy aimed at forming a competitive creative mentality is based.

The development of the creative industries sector has a positive impact on the environmental paradigm of thinking among the population, as such creative industries as "craftsmanship", "cinematography", and "printing" have deep connections with the theme of the environment in general and biodiversity in particular.

International funding for creative industries is often directly tied to promoting the environmental agenda and raising issues of biodiversity conservation (for example, it is expressed in the non-acceptance of animal destruction for the production of light industry products or the secondary use of creative products).

The state of biodiversity is of significant importance for promoting several sectors of Kazakhstan's creative industries internationally.

Negative trends in biodiversity can serve as a theme for the "cinematography/documentary" direction.

9. "Concept for the Development of the Geological Industry of the Republic of Kazakhstan for 2023–2027" approved by the Resolution of the Government of the Republic of Kazakhstan dated December 30, 2022 No. 1127[12]

According to the assessment conducted by the International Council on Mining and Metals (ICMM), various technological operations of mining production have varying degrees of negative impact on biodiversity. For example, at the early stages of exploration, the impact on biodiversity is almost negligible. At the stage of mine operation, polluted air and water entering the atmosphere contain harmful substances that not only negatively affect the organisms of people and animals but also lead to various global effects. For example, acid rain and climate change result in the death of the most sensitive species unable to adapt to rapidly changing environmental conditions and, as a consequence, the alteration of ecosystems themselves. To address this problem at the international level, many countries have signed the Convention on Biological Diversity.

Kazakhstan also needs to include measures to preserve biodiversity in the main approaches to the development of the geological industry.

[12] https://adilet.zan.kz/rus/docs/P2200001127

However, this Concept does not pay any attention to this, which is a very dangerous signal. The overall procedure for issuing licenses for subsoil use introduced in the mining industry on the principle of "first come, first served" (principle of first application) provides for significantly reduced terms for granting subsoil use rights, considering the risks of environmental restoration and financing of works – the exploration license is granted under the condition of providing financial security for the elimination of exploration consequences.

In fact, the state prioritizes achieving goals in the geological industry over biodiversity conservation issues, which is subsequently manifested in the complete disregard for biodiversity interests when implementing projects in the subsoil use sector.

The geological industry, as a foundation for the development of subsoil use, has a significant negative impact on biodiversity.

10. "Concept for the Development of Rural Territories of the Republic of Kazakhstan for 2023–2027" approved by the Resolution of the Government of the Republic of Kazakhstan dated March 28, 2023 No. 270[13]

The Concept is adopted to develop institutional support and enhance the effectiveness of approaches to the development of rural territories, as well as to improve the quality of life and create a comfortable living environment in rural areas.

The Concept defines the vision for the further development of rural territories in the medium term. It is projected that by 2027 there will be 5.9 thousand rural settlements in Kazakhstan, while the rural population will stabilize at 7.7 million people.

Rural areas will become an attractive living environment where rural residents will have:

- Decent earnings, permanent jobs, access to credit resources, and state support measures;
- Comfortable villages for living equipped with high-quality engineering, social, and transport infrastructure comparable to urban levels, access to drinking water, high-speed internet, and safe ecology;
- Accessible and high-quality services enabling competitive education, timely medical and social assistance;
- Productive rural areas due to the preferential development of the agro-industrial complex, considering ecological risks, ensuring the sale of agricultural products, and rational use of agricultural lands;
- Villages as equal participants in the state governance system based on effective distribution of powers between levels of executive power and maximum involvement of local self-government bodies, businesses, and citizens in the implementation of reforms.

The principles of sustainable development of rural areas are based on the following principles:

- The principle of human-centeredness, meaning the formation of rural development policy in the interests of people (the state ensures equal access of the population to basic state services regardless of residence, as well as the need to ensure employment and improve the standard of living of the rural population according to modern standards, increasing life expectancy in rural areas);
- The principle of increasing the contribution of rural areas to the socio-economic development of the country, including through continuous improvement of agricultural efficiency and productivity;

[13] https://adilet.zan.kz/rus/docs/P2300000270

- The principle of "people to infrastructure," that is, reducing the migration outflow of the rural population to cities by promoting their natural concentration in villages with development potential and developed infrastructure.

Disparities in the provision of basic services (housing, social infrastructure) will be reduced, the income level of the rural population will be increased, and the institutional support for rural development will be ensured.

For regions, within the framework of measures for the development of rural areas, conditions will be created for the restoration and reclamation of lands, resolution of water and environmental problems of territories, and development of ecosystems according to priority areas of the agro-industrial complex (AIC), ensuring irrigation and drinking water supply.

Reconstruction of existing reservoirs and construction of new reservoirs for water accumulation will be implemented, which will reduce the threat of flood events for settlements, bring new irrigated lands into circulation, etc.

Rural areas possess unique natural-climatic and cultural-historical features that allow developing all types of tourism. The most attractive directions will be agro-tourism, ethno-tourism, and eco-tourism, for which the corresponding infrastructure will be modernized.

Does this document address the issue of biodiversity conservation in rural areas? According to the calculations of the World Meteorological Organization, the process of climate change in Kazakhstan will intensify in the next 20 years.

Climate catastrophes (droughts, forest fires, and river shallowing) will become commonplace in Kazakhstan.

According to forecasts, by 2030, the pasture carrying capacity in the country will decrease by 10%, and by 2040, the water deficit will be 50% of the need.

In general, the climate of Kazakhstan is warming almost twice as fast as the global climate. By 2050, Kazakhstan may find itself on the list of countries experiencing catastrophic water stress.

Accordingly, under the conditions of a changing climate, the need to revise agricultural practices is evident.

It is expected that severe droughts in Kazakhstan will occur more frequently, contributing to land degradation and desertification, leading to the emergence of dust storms throughout the country. Already, two-thirds of Kazakhstan's land is at risk of drought, with severe droughts and crop failures occurring every 2–3 years, and 23.5% of the country's population already living on degraded lands.

There are 3,030 solid waste disposal sites (landfills and dumps) in the country, of which only 21% meet environmental requirements and sanitary standards.

Residents of rural settlements do not have a centralized waste collection system and are not covered by waste removal services, leading to the formation of spontaneous dumps. Local executive bodies spend significant funds annually on their elimination.

One of the fundamental flaws of this Concept is its erroneous perception exclusively through the prism of agriculture, while it concerns the vast majority of Kazakhstan's territory that does not belong to urban areas.

The development of rural areas (not agriculture) is critically important for biodiversity.

This document should have a separate section dedicated to the issue of biodiversity, and biodiversity conservation funding should be integrated into rural development issues.

Biodiversity is critically important both for the development of rural areas and for the development of agriculture in these areas.

However, the document itself only indirectly considers biodiversity as the basis for the prosperous development of rural areas.

11. "Concept of Cultural Policy of the Republic of Kazakhstan for 2023-2029," approved by the Decree of the Government of the Republic of Kazakhstan dated March 28, 2023, No. 250[14]

According to the Concept, cultural policy is one of the means of forming national unity and modernizing national consciousness. It is carried out through state support for cultural life processes in society and the upbringing of citizens through cultural means.

As the document indicates, the development of human resources and the spiritual and moral upbringing of the younger generation are one of the main principles and approaches to the development of cultural policy.

In 2022, as part of the implementation of this Concept, a republican cultural and educational project "Student's Cultural Standard" was introduced in Kazakhstan.

The project includes the development of children's tourism and the resumption of the possibility for students to travel around the country. It would be appropriate to use this project to instill knowledge about biodiversity in the younger generation.

Overall, the Concept of Cultural Policy does not consider biodiversity as a significant element necessary for the development of individual cultural sectors. There is also a lack of understanding of the use of culture as a key tool for biodiversity conservation. A critical review of the role and place of this Concept in biodiversity conservation is necessary.

The state of biodiversity is of decisive importance for promoting Kazakhstan's culture on the international stage.

12. "Concept of Development of Preschool, Secondary, Technical and Vocational Education of the Republic of Kazakhstan for 2023-2029," approved by the Decree of the Government of the Republic of Kazakhstan dated March 28, 2023, No. 249[15]

The concept of youth policy includes 6 directions, 10 target indicators, and 72 activities. One of the main innovations is the introduction of the Youth Development Index, which will allow evaluating the effectiveness of local executive bodies in working with youth and solving their problems.

The Concept also provides for an increase in the share of young entrepreneurs to 30%, and the employment of young people who have applied to employment centers to 61%.

By 2029, it is planned to provide employment for 2.3 million young people, including 1 million rural residents. At the same time, 1.5 million young Kazakhs living in rural areas will be trained in digital literacy.

The implementation of the Concept will ensure access for children aged 2 to 6 years to quality preschool education and will contribute to improving the quality of school education.

Measures will be taken to create a comfortable and safe educational environment by eliminating three-shift and emergency schools, as well as the shortage of student places. To address the issue, 1.5 million new student places will be introduced. It is expected that schools will be fully equipped with security systems. By 2026, 5,000 schools in villages, small towns, and district centers will be modernized.

Significant attention is given to creating conditions for the development of creative, intellectual, and physically developed individuals, as well as ensuring quality health improvement and recreation for children.

[14] https://adilet.zan.kz/rus/docs/P2300000250

[15] https://adilet.zan.kz/rus/docs/P2300000249

In the system of technical and vocational education, the focus is on providing free training in colleges for in-demand specialties for Kazakh youth.

According to the Concept, educational work in the country's educational organizations is implemented in the following main areas: spiritual and moral education; national education; family education; education in Kazakhstan's patriotism and citizenship, legal education; labor, economic, and environmental education; polycultural and artistic-aesthetic education; intellectual education, information culture education; physical education, healthy lifestyle, and others.

Environmental education, careful attitude towards the environment, instilling environmental values, financial and entrepreneurial skills will be carried out through a comprehensive set of educational activities. The development of environmental culture in the younger generation should be carried out through the lens of careful attitude towards nature, animal protection principles, and support for environmental organizations.

To develop Kazakh patriotism and active civic position in the younger generation, the coverage of students by socially significant movements such as "Green Economy," "Environmental Protection," "My Homeland, My City/Village," and others is expanding in educational organizations. The development of civic activity is accompanied by students' participation in debate movements, school and student self-government, and youth movements such as "Zhas Kyran," "Zhas Ulan," "Zhas Sarbaz."

The Concept is based on principles such as the priority of civic and national values, human life and health, and the free development of personality. It is necessary to cultivate biodiversity as an important component of the concept of national value.

The Concept lays the foundation for the population's environmental culture, which has the most direct and systematic significance for biodiversity conservation.

13. "Concept of State Youth Policy of the Republic of Kazakhstan for 2023-2029," approved by the Decree of the Government of the Republic of Kazakhstan dated March 28, 2023, No. 247[16]

The Concept provides that by 2029, thanks to an effective model of interagency cooperation, a state youth policy will be established in Kazakhstan, which will be integrated into all areas of public relations. A civically active young generation, formed on the basis of patriotic values, will be represented at all levels of government.

It is planned to involve youth in environmental activities and support youth environmental initiatives at the regional level. Also, to develop an environmentally and ethically responsible attitude of youth towards the environment.

The comprehensive plan provides for the implementation of 55 activities within 10 directions, which include tasks related to education and employment, promoting a healthy lifestyle, spiritual and moral education, solving housing issues, and increasing the level of legal and environmental culture.

The implementation of the Concept involves coordinated actions in the field of state youth policy, coordination in the areas of civic activism, entrepreneurship, patriotic education, healthy lifestyle, culture, and education. The main approaches are focused on developing youth potential, integrating youth into socio-economic and political processes based on broad interaction between the state, civil society institutions, and the business community.

Global trends inevitably influence the transformation of the values of modern Kazakh youth. The emergence of woke culture (from English "woke" – awakened), increased attention to issues of social, ethnic, and gender equality, globalization, which generates homogenization, the COVID-19 pandemic, and the environmental agenda form a completely new value foundation.

[16] https://adilet.zan.kz/rus/docs/P2300000247

Youth will be actively involved in volunteer initiatives.

Grant funding for projects aimed at developing youth and volunteer initiatives will increase.

Special support will be given to involving youth in environmental activities, developing environmentally and ethically responsible attitudes of youth towards the environment.

The Concept ensures the involvement of youth in processes related to biodiversity conservation.

14. "Concept of Physical Culture and Sports Development of the Republic of Kazakhstan for 2023–2029", approved by the Resolution of the Government of the Republic of Kazakhstan dated March 28, 2023 No. 251[17]

The Concept focuses on mass sports, accessibility of physical culture for all citizens, amateur and professional sports, high achievements, adaptive sports, and the promotion of national sports.

The goal of the Concept is to increase the share of children and adolescents systematically engaged in physical culture and sports to 45%, and the overall percentage of the sports-active population to 50%. Among people with special needs, this indicator is planned to be increased to 23%. The provision of citizens with sports infrastructure per 1000 people should increase to 65%, and the coverage of sports infrastructure in key, satellite, and strategic rural settlements should reach 100%. The percentage of citizens engaged in national sports will grow to 9.6% of the total number of those engaged in physical culture and sports. It is also planned to increase the share of graduates from republican specialized boarding schools-colleges of the Olympic reserve who meet the standards of master of sports and master of sports of international class to 35%. The number of medals won annually at international level tournaments will be at least 900 units.

The implementation of the Concept requires the creation of sports infrastructure facilities (safe running and cycling paths, sports zones, walking routes, etc.) within walking distance for safe family recreation in parks (annually until 2029).

The development of sports implies the placement of various facilities on recreational lands, as well as near and in state national natural parks (e.g., within the framework of the development of sports tourism). This may increase the anthropogenic load and negatively impact biodiversity components.

15. "Concept of Fuel and Energy Complex Development of the Republic of Kazakhstan for 2023–2029", approved by the Resolution of the Government of the Republic of Kazakhstan dated June 28, 2014 No. 724[18]

According to the Concept, steps are planned to increase the production of commercial gas (+25.5%) and the rate of gasification of the republic (to 63.4% by 2029), increase the output of petrochemical products (by 6.6 times), coal production (+3%) and reduce the energy intensity of the economy (to 5%).

In the field of electricity, it is planned to modernize several existing and introduce new generating capacities, which will provide an additional 11.7 GW of energy, as well as increase the share of electricity from renewable sources in the total output to 12.5%, reduce the level of wear of power grids to 47%, and complete the formation of a unified energy system of the republic. The projected maximum electrical load in the UES RK in 2029 will be 22.9 gigawatts. The coverage of the projected demand for electricity will be ensured by the generation of electricity in the amount of 146 billion kilowatt-hours in 2029.

[17] https://adilet.zan.kz/rus/docs/P2300000251

[18] https://adilet.zan.kz/rus/docs/P1400000724

In the petrochemical industry, the launch of major projects is planned, including plants for the production of polyethylene (1,250 million tons per year), butadiene (319 thousand tons), polypropylene (80 thousand tons), etc. At the same time, the level of oil production is planned to be increased through the expansion of production capacities at Tengiz, Kashagan, and Karachaganak, and the development of new promising projects jointly with foreign partners.

New renewable energy projects (RES) with generating capacities of 4000 megawatts (traditional sources) and small autonomous RES generation will be introduced across the country.

The nuclear industry will expand its presence in new segments of the pre-reactor nuclear fuel cycle. The construction of a nuclear power plant is scheduled to begin in December 2029.

The share of coal generation in the overall energy structure will gradually decrease. The coal industry will continue to develop within the new strategy for the development of coal companies, with a gradual transition to a new direction – coal chemistry.

In the oil and gas industry, the implementation of expansion projects at the Tengiz, Kashagan, and Karachaganak fields will gradually increase oil production by 2029 to 97 million tons. With the upcoming increase in oil production at the Tengiz and Kashagan fields, hydrocarbon exports in 2029 will increase to 76 million tons.

By 2029, the gasification rate of the country will be 63.4%. The production volume of petrochemical products will increase by 6.6 times compared to 2022 and will amount to 1.8 million tons by 2029.

The implementation of this document poses a significant threat to biodiversity. At the same time, the Concept pays little attention to environmental issues (except for tasks related to the development of renewable energy sources and the declarative mention of the use of environmentally friendly technologies). The document lacks an assessment of environmental risks, including the risks of biodiversity loss.

16. "Concept of Investment Policy of the Republic of Kazakhstan until 2026", approved by the Resolution of the Government of the Republic of Kazakhstan dated July 15, 2022 No. 482[19]

The goal of the Concept is to bring the level of investment in fixed capital to 25.1% of GDP and increase the inflow of foreign direct investment to US$25.5 billion by 2026.

To achieve these goals, the Concept provides a set of measures to revise investment attraction policies taking into account new trends, allowing to change the structure of investments towards competitive production of high value-added goods. The main vision of investment development lies in a balanced approach to attracting investments, taking into account the contribution of each industry to the development of the economy. The key driver of increasing competitiveness will be the manufacturing industry.

One of the conditions for the development of the investment ecosystem is the formation of a favorable investment image through the implementation/observance of ESG principles[20].

Currently, the global capital market is redirecting investment flows to sectors/productions/companies that responsibly address environmental, social, and corporate governance issues and aim for clearly positive environmental and social outcomes. Ignoring the ESG agenda is an obvious path to closing capital markets both in the medium and long term for the country and individual companies.

[19] https://adilet.zan.kz/rus/docs/P2200000482

[20] ESG (Environmental, Social, Governance) principles – company operating principles based on environmental protection, creation of favorable social conditions, fair treatment of employees and customers and proper corporate governance

Within this direction, a deep analysis and assessment of the best international ESG practices will be conducted, allowing to form appropriate recommendations and proposals for their adaptation to Kazakhstan's conditions.

The issue of implementing ESG principles in the state planning system will be worked out since non-compliance with ESG principles may lead to underfunding.

This document is a good example of the mutual influence of biodiversity (as one of the significant components of ESG principles) and investments.

The orientation of investment policy towards ESG principles will have a beneficial effect on the state of biodiversity in terms of minimizing possible negative impacts if the state did not follow ESG principles.

However, the term "biodiversity" and a direct reference to the value of biodiversity as the basis for investment activities are missing.

The favorable state of biodiversity is directly correlated with the achievement of the goals of this Concept, taking into account the conditionality of international investments by compliance with ESG principles.

17. "Concept of Energy Saving and Energy Efficiency Improvement of the Republic of Kazakhstan for 2023–2029", approved by the Resolution of the Government of the Republic of Kazakhstan dated March 28, 2023 No. 264[21]

The Concept was developed to change the policy of energy saving and energy efficiency improvement in the economic sectors, taking into account advanced global experience, and aimed at creating conditions for reducing the energy intensity of Kazakhstan's GDP by reducing consumption and inefficient use of fuel and energy resources.

It is expected that the implementation of this Concept will affect the reduction of specific energy consumption in the production of products in priority industrial sectors, the reduction of energy consumption in the public sector, housing and communal services, and the transport sector.

One of the target indicators of the Concept is the reduction of the energy intensity of industry by 10% by 2029 from the 2021 level, which ultimately should have a positive impact on biodiversity by preventing the growth of electricity and heat production, which could otherwise lead to critical levels of environmental pollution.

18. "Concept for the Development of the Transport and Logistics Potential of the Republic of Kazakhstan until 2030," approved by the Resolution of the Government of the Republic of Kazakhstan dated December 30, 2022, No. 1116[22]

The strategic goal of this Concept is to bring all transport infrastructure in Kazakhstan in line with safety standards by 2030 to ensure accessible, safe, and inclusive mobility, including year-round transport accessibility of socially significant objects, infrastructure, and services for the population and business. The Concept provides for the development of all branches of transport and covers issues of the development of rail, road, water, air transport and logistics.

Key problems in the industry include:

1) The shallowing of the Caspian Sea. Due to the reduction of the Caspian Sea level at a rate of about 6-7 centimeters per year, in some ports, ships cannot be loaded to full draft, leading to decreased overall efficiency and increased transportation costs.

[21] https://adilet.zan.kz/rus/docs/P2300000264

[22] https://adilet.zan.kz/rus/docs/P2200001116

2) High environmental damage from the activities of the transport and logistics complex (TLC) and insufficient use of "green" technologies.

The Concept's main principles and approaches to transport and logistics potential include the principle of "green" development, ensuring environmental protection and human safety at all stages of TLC planning, development, and operation. According to the Concept, a set of measures will be developed to stimulate the phased decommissioning of vehicles that do not meet current and future environmental standards. A comprehensive assessment of the economic, environmental, and social effects of the phased transition of Kazakhstan's transport sector to natural gas will be conducted. Effective tools for auditing and measuring aviation noise, emissions, and air pollution will be introduced to improve environmental policy in air transport. The possibilities of producing and using sustainable aviation fuel (SAF) for air transport will be explored to reduce greenhouse gas emissions and the carbon footprint.

Intensive development of sea transport requires proper monitoring of water pollution and safe navigation of ships in the territorial waters of the Republic of Kazakhstan. Environmental control over the impact of sea transport on the environment will be carried out by taking preventive measures to prevent sea pollution during the operation of sea transport, including the development of regulatory requirements to stimulate investments in environmental technologies in seaports and the safe use of alternative fuels on sea vessels. For liquefied natural gas ship bunkering, the construction of a small-capacity plant/filling station in the ports of the Kazakh sector of the Caspian Sea (KSCS) will be considered.

The development of inland waterway transport will be carried out by stimulating the use of more environmentally friendly types of transport, including the redistribution of cargo flows from road to river transport. In cities with a sufficiently developed network of inland waterways, restrictions on the use of heavy-duty vehicles may be introduced.

To reduce the environmental impact of transport, the planning and implementation of transport and logistics infrastructure development projects must take into account their impact on achieving sustainable development goals in line with the UN General Assembly's "Transforming our world: the 2030 Agenda for Sustainable Development," as well as Kazakhstan's commitments to decarbonization under the Paris Agreement on Climate Change dated December 12, 2015.

When constructing new and operating existing transport and logistics infrastructure facilities, environmental standards, principles of sustainable development, and principles of leading countries on investments in high-quality infrastructure should be considered, including best practices in design aimed at convenience and quality of service for passengers, including those with reduced mobility. Priority should be given to projects based on principles of high-quality environmental, social, and corporate governance.

One of the main directions for reducing environmental damage from transport and logistics activities should be the phased alignment of transport and logistics infrastructure and services with regulatory requirements in the field of environmental safety and environmental protection, along with the further development and improvement of the regulatory legal framework in this area. The development and popularization of environmentally friendly types of transport will continue. In particular, large-scale deployment of charging infrastructure for electric vehicles along the busiest road corridors will begin.

The development of transport and logistics infrastructure will have a direct and significant negative impact on biodiversity.

The document lacks clear measures to visibly minimize the negative impact on biodiversity.

Declarative formulations like "environmental standards, principles of sustainable development, and principles of leading countries on investments in high-quality infrastructure, best practices in design" should be taken into account, but will have no significance without supporting such intentions with specific, measurable, and time-bound tasks.

19. "Concept for the Development of the Electric Power Industry of the Republic of Kazakhstan for 2023-2029," approved by the Resolution of the Government of the Republic of Kazakhstan dated March 28, 2023, No. 263[23]

The basis of Kazakhstan's electric power industry is coal energy, with coal deposits mainly concentrated in Northern and Central Kazakhstan, where the main sources of electric power are also located.

To achieve carbon neutrality, the industry has taken a course towards decarbonization. In this regard, ecological commitments are being fulfilled through the development of renewable energy sources (RES) and alternative energy. However, for energy security purposes, given the depletion of proven natural gas reserves and limited gas transportation infrastructure (gas station construction rates will decrease), coal plants will retain their presence in the generation sector in the medium term.

Costs for applying the best available techniques are not provided for in the existing tariff formation methodology. Thus, there is currently no mechanism and source of funding for environmental measures (implementation of an automated monitoring system (AMS) and best available technology (BAT), financial provision for the elimination of the consequences of operating Category I facilities). In addition, there are no agreed plans for the commissioning and decommissioning of generating capacities in the long-term transition to carbon neutrality.

Maintaining the status quo in coal generation and its growth for energy security will continue to have a negative impact on biodiversity. For example, ash from thermal power plants (TPP) spreads with the wind over significant distances and settles on soil and grass. The negative impact on animals is observed, such as livestock suffering from tooth surface wear due to abrasive ash particles. The impact of this ash on other components of biodiversity requires further research and analysis.

The implementation of this document poses a significant threat to biodiversity.

20. "Cybersecurity Concept ("Kazakhstan Cyber Shield")," approved by the Resolution of the Government of the Republic of Kazakhstan dated June 30, 2017, No. 407[24]

Despite the apparent lack of direct correlation with biodiversity, it is essential to remember the role of the internet and online platforms as tools in the illegal trade of wildlife. The illegal trade of wild animals and plants, including those listed in the Red Book, is a serious problem with negative economic and social consequences (loss of biodiversity, damage to natural resources, financing of criminal elements, threats to public safety, financial losses in the form of state revenue losses, impacts on business and politics). Enhancing cybersecurity can help combat organized crime in general, including illegal trade on online platforms involving wild animals and plants. Effective measures to protect information and combat cyber threats contribute to the security of online platforms and reduce the possibility of using the internet for illegal purposes.

[23] https://adilet.zan.kz/rus/docs/P2300000263

[24] https://adilet.zan.kz/rus/docs/P1700000407

21. "Action Plan for the Implementation of the Concept for the Development of Public Administration in the Republic of Kazakhstan until 2030," approved by the Resolution of the Government of the Republic of Kazakhstan dated July 8, 2021, No. 470[25]

The Concept is intended to ensure transparency and openness of public services and government decisions. The key idea of the upcoming reforms is human-centeredness, and the goal is to improve the quality of life of every resident of the country. Therefore, the principles of accountable, effective, professional, pragmatic, and, most importantly, responsive government are the foundation of the document. The implementation of the Concept will ensure a transition from an administrative-control orientation to a service model of interaction between the state and the population, where the main values will be people and their well-being.

The document defines approaches to improving the professionalism of the civil service, its accountability to society, regulatory policy improvement, enhancing the efficiency of public services, optimizing the quasi-public sector, developing local self-government, etc. In general, the measures laid down in the Concept will contribute to the growth of the civil service's efficiency and openness, increasing the level of trust in public administration institutions.

The Concept sets nine specific tasks:

The first one is forming a client-oriented and open state apparatus focused on the principle "people first." The "E-appeal" system has been implemented. The "E-petition" project has been launched to support public initiatives and create opportunities to express collective opinions on various problems and situations, designed to create a single legitimate institution of online petitions for citizens to initiate reforms and proposals.

Second task of the Concept – improving approaches to strategic and budgetary planning and implementing reforms.

Third task – forming an optimal and efficient state apparatus by revising the decision-making vertical.

Fourth task – transitioning to proactive public services based on citizen needs. Public services will continue to transition to digital format, with a focus on developing the eGov mobile application ("government in a smartphone").

Fifth task – improving human resource quality and professionalizing the civil service.

Sixth task – forming an efficient, optimal, and transparent quasi-public sector.

Seventh task – further improvement of local self-government.

Eighth task – creating favorable conditions for business development.

Ninth task – transforming the judicial and administrative system and the law enforcement system to build a service model of the state.

The implementation of this Concept has a critical and potentially beneficial impact on the state of biodiversity.

Improving public administration, especially in terms of interaction with non-governmental organizations (NGO) and the implementation of the institution of public petitions, will help draw the attention of the authorities to pressing problems in the field of biodiversity.

The state of biodiversity can serve as an indicator of the success of the implementation of this Concept.

[25] https://adilet.zan.kz/rus/docs/P2100000470

22. "Concept for the Development of Housing and Communal Infrastructure for 2023–2029," approved by the Decree of the Government of the Republic of Kazakhstan dated September 23, 2022, No. 736[26]

The purpose of the Concept is to ensure the development of a comprehensive communal infrastructure and comfortable housing.

The Concept has two directions: modernization and development of the communal sector and the development of housing infrastructure.

The implementation of the Concept will lead to large-scale housing construction, which in turn will have a multiplier effect on the development of the construction industry and the growth of domestic building materials production. By the end of 2022, the production of building materials increased by 101.3%.

Despite the fact that one of the expected social effects of the Concept's implementation is the improvement of the environmental situation, the implementation of this document poses significant threats to biodiversity due to the multiple increase in the production of building materials.

For example, the illegal extraction of common minerals (sand, gravel, etc.) due to increased demand from the construction industry leads to the barbaric destruction of riverbeds and entire ecosystems, resulting in a loss of biodiversity.

Example: In the Turkestan region, there are about 200 rivers, and in most of them, the bottom has subsided by 15 meters. The reason is the illegal extraction of sand and gravel. According to employees of the Aral-Syrdarya Basin Inspection, in about ten years, the water may disappear underground entirely.

The state of biodiversity can devalue the implementation of housing and communal services.

23. "Concept for the Migration Policy of the Republic of Kazakhstan for 2023–2027," approved by the Decree of the Government of the Republic of Kazakhstan dated November 30, 2022, No. 961[27]

The Concept is aimed at stimulating the influx of qualified personnel into the country, protecting the rights of Kazakh citizens working abroad, eliminating demographic imbalances between regions of the country, and, in general, "rebooting" migration policy.

The Concept provides for 7 areas of implementation:

The first area of migration policy is educational immigration, aimed at positioning Kazakhstan as a regional educational hub.

The second area of migration policy is business immigration, which needs to be stimulated against the backdrop of intensifying global competition for investments. It is worth noting that the attitude towards biodiversity in the country is one of the indicators of investment attractiveness. A reduction in biodiversity can worsen the image of a business and lead to potential investors switching to competitors.

The third area is the attraction of skilled labor migrants to Kazakhstan with an emphasis on foreign specialists in scarce professions who have a high degree of professional qualification, ensuring technology transfer and the training of national personnel.

The fourth area is the rethinking of ethnic migration regulation – "Preserving national traditions and strengthening economic ties with the historical homeland through the involvement of ethnic Kazakhs – citizens

[26] https://adilet.zan.kz/rus/docs/P2200000736

[27] https://adilet.zan.kz/rus/docs/P2200000961

of other countries in the development of Kazakhstan."

The fifth area is fulfilling international obligations to work with refugees, asylum seekers, and stateless persons, and providing assistance to refugees, asylum seekers, and stateless persons in the territory of the Republic of Kazakhstan.

The sixth area is the protection of the rights of labor migrants (emigrants), who are citizens of Kazakhstan.

The seventh area is stimulating internal mobility of Kazakh citizens to balance demographic imbalances between labor-surplus and labor-deficit regions through the revision of resettlement programs.

Kazakhstan's major cities attract migrants with their infrastructure and opportunities; more and more Kazakh citizens prefer living in cities. From the state's point of view, urbanization is a catalyst for development, making the economy more efficient and diversified, creating new forms of production, expanding the service sector, deepening professional knowledge, and activating innovative activities.

However, mass spontaneous migration from rural areas to cities causes problems for both rural areas, where there is a shortage of labor, and cities. In cities, these problems are related to housing construction, the development of urban transport and engineering infrastructure, the need for the development of social services, and ensuring the environmental safety of residents.

The further outflow of the population from rural areas in the long term will lead to a deterioration in biodiversity financing, as taxes and budget investments "move" to cities along with people.

The deterioration of biodiversity is one of the factors that will intensify the trend of urbanization, which in turn will worsen biodiversity financing, forming a vicious circle.

24. "Concept for Increasing Financial Literacy for 2020–2024," approved by the Decree of the Government of the Republic of Kazakhstan dated May 30, 2020, No. 338[28]

The purpose of the Concept is to form rational financial behavior among citizens when making decisions regarding personal finances, improve the protection of their rights and interests as investors and consumers of financial services, and increase the level and quality of life of citizens through the use of high-quality financial products and services. Financial literacy includes four interconnected components: coverage level, financial behavior, financial knowledge, and financial skills.

A high level of financial literacy among the population contributes to raising the standard of living of citizens, attracting individual investors' funds into the country's economy, developing competition in financial markets, strengthening financial stability, and improving public welfare. Thus, the development of the Concept for Increasing Financial Literacy is a relevant and necessary measure to stimulate economically rational behavior of the population through education and awareness, and consequently, improve their welfare and quality of life. Financial literacy also teaches citizens to assess the value of biodiversity in financial terms and correctly perceive such categories as "payment for ecosystem services."

It can be confidently stated that increasing financial literacy is an important component of biodiversity conservation. The Concept highlights a very important problem – the lack of financial planning skills creates a habit of thinking only about the present day, i.e., citizens are not receptive to long-term problems and tasks, such as biodiversity conservation, until they have basic financial literacy.

[28] https://adilet.zan.kz/rus/docs/P2000000338

25. National Project "Green Kazakhstan," approved by the Decree of the Government of the Republic of Kazakhstan dated October 12, 2021, No. 731[29]

The purpose of developing the national project is to create a favorable living environment for the population and improve the environmental situation, including: improving air quality, effective waste management of production and consumption, efficient and careful use of water, conservation of the ecosystems of Lake Balkhash and the Northern Aral Sea, preservation of biological diversity by increasing the population of rare and endangered species of animals and fish fauna, as well as creating specially protected natural areas, increasing the area of green spaces, fostering a careful attitude towards nature and wildlife, and modernizing the environmental consciousness of the population.

The national project consists of four sections (directions), within each of which it is planned to solve a number of extremely important tasks, which should contribute to creating a favorable living environment for the population in our country, forming a careful attitude towards nature in society, and everything that surrounds us.

The first task is "Taza Kazakhstan" ("Clean Kazakhstan"). It includes, among other things, solving the task of reducing emissions of pollutants into the atmosphere.

The second task to be solved within the framework of the first direction of the national project is "sustainable waste management."

The third task is "conservation of water body ecosystems in the country." This primarily refers to the Northern Aral Sea (NAS) and Lake Balkhash.

The fourth task is "Ecology bolashağı" ("Future of Ecology"). Its goal is to form environmental consciousness in Kazakh society, a careful attitude towards nature, and the resources we all use in everyday life.

With certain reservations, the national project can be considered as an existing national plan for biodiversity conservation. It should be noted that the term "biological diversity" is used only once in the text of the document.

The state of biodiversity is a key indicator of the successful implementation of this document.

26. Pilot National Project "Modernization of Rural Healthcare," approved by the Decree of the Government of the Republic of Kazakhstan dated November 30, 2022, No. 962[30]

This national project was developed in response to the President of the Republic of Kazakhstan's Address of September 1, 2022, "Fair State. One Nation. Prosperous Society." The national project aims to improve the level of medical care for the rural population and is intended to cover 650 settlements and modernize 32 district hospitals to the level of multidisciplinary medical institutions.

The implementation of the national project will stop the outflow of the population from rural areas and attract new medical personnel, which will lead to population growth and the development of rural areas. Given that the outflow of the population from rural areas leads to a deterioration in funding, the "departure" of taxes and budget investments, it can be confidently stated that this national project has the most positive impact on biodiversity.

A prosperous state of biodiversity has a direct positive impact on the health of the population and reduces the budget's healthcare costs in the long term.

[29] https://adilet.zan.kz/rus/docs/P2100000731

[30] https://adilet.zan.kz/rus/docs/P2200000962

27. National Project "Quality Education 'Educated Nation'", approved by the Resolution of the Government of the Republic of Kazakhstan dated October 12, 2021 No. 726[31]

The aim of this Project is to improve the quality of education for students at all levels of education. Significant attention is given to the coverage of preschool education and training for children.

The expected social effect is to achieve 100% coverage of children aged 3-6 with preschool education and training.

The Project does not focus on environmental education and training for preschool children, based on the idea of shaping the child's perception of humans not as masters and conquerors of nature, but as part of nature dependent on it. Environmental education should contribute to instilling in preschoolers norms of respect for the natural environment, ecological responsibility for its condition; developing in children of preschool age the conviction in the importance of nature conservation activities, forming corresponding skills and abilities; fostering in preschoolers a desire to interact with living nature, an interest in understanding its laws; cultivating humane attitudes towards all living things, fostering high standards of behavior in nature through understanding the specifics of living organisms; nurturing value orientations of the child's personality, environmentally motivated behavior of children in nature.

Given the separation of environmental education into a separate significant task of the Project's preschool program, the implementation of the document would have paramount importance for strategically improving biodiversity conservation.

[31] https://adilet.zan.kz/rus/docs/P2100000726

28. National Project in the field of communications "Accessible Internet", approved by the Resolution of the Government of the Republic of Kazakhstan dated October 27, 2023 No. 949[32]

The national project is implemented to fulfill the instructions of the Head of State for the development of the internet industry in the republic. Its key goal is to provide the population with broadband access to the World Wide Web at speeds of at least 100 Mbps.

To achieve the goal of reducing digital inequality, it is critically important to provide the necessary infrastructure to all rural settlements. Significant funds within the project will be allocated to the development of wired and wireless communication infrastructures. The main focus will be on building a branched network of fiber-optic communication lines in rural areas. Satellite communication channels will also be organized to ensure access to high-speed Internet in sparsely populated rural areas. This organization will be implemented using resources from the satellite communication system.

The project has an indirectly positive impact on biodiversity conservation. For instance, certain biodiversity projects face difficulties due to the lack of internet access in remote locations away from large population centers. Ensuring quality internet access in rural areas will contribute to reducing population outflows and preserving conditions for financing biodiversity conservation measures.

29. Pilot National Project in the Field of Education "Comfortable School", approved by the Resolution of the Government of the Republic of Kazakhstan dated November 30, 2022 No. 963[33]

The aim of this project is to eliminate emergency schools, three-shift schooling,

[32] https://adilet.zan.kz/rus/docs/P2300000949

[33] https://adilet.zan.kz/rus/docs/P2200000963

and the deficit of student places in secondary educational institutions. Its implementation is planned for three years, from the beginning of 2023 to the end of 2025. During this period, numerous new buildings of general educational institutions, meeting all modern standards, are expected to be constructed, totalling 800 thousand student places considering two-shift schooling. The project involves concluding contracts aimed at developing the industry, including off-take contracts, with domestic manufacturers of furniture and building materials.

The National Project "Comfortable School" has a pilot status. This implies that if successfully implemented, it may continue and even expand its coverage.

The implementation of this document poses risks to biodiversity in terms of additional growth in the production of building materials. For example, illegal extraction of widely available minerals (such as sand, gravel, etc.) due to increased demand from the construction industry leads to barbaric destruction of riverbeds and entire ecosystems, resulting in loss of biodiversity.

30. Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan by 2060, approved by the Decree of the President of the Republic of Kazakhstan dated February 2, 2023 No. 121[34]

The main goal of the Strategy is to achieve sustainable development of Kazakhstan's economy towards climate change adaptation and carbon neutrality by 2060.

The midterm goal of the Strategy is to reduce greenhouse gas emissions by 15% by 2030 compared to 1990 levels (unconditional goal) and to achieve a reduction of 25% with international support for the decarbonization of the economy (conditional goal).

The Strategy aims to achieve its goal through comprehensive implementation of low-carbon policies and application of sectoral approaches (in energy, industry, agriculture, forestry, waste management) and cross-cutting approaches (just transition, "green" financing, research and development (R&D), education, public awareness, international cooperation, climate change adaptation, carbon regulation system).

The concept of "biodiversity" is mentioned once in the text of the Strategy, and in a somewhat undefined manner (quote): "*An important aspect is the integration of biodiversity into agriculture. As a result of changes in land use, the sector can become a net CO_2 sink, which will allow covering greenhouse gas emissions from agricultural production by 2060 and partially in other sectors*."

Considering that agriculture is one of the economic sectors significantly impacting biodiversity, the Strategy's vision for decarbonizing agriculture can be positively evaluated. It envisages the implementation and development of:

1) Sustainable agriculture and livestock management, improvement of irrigation;
2) Sustainable forest use and forest restoration.

However, the possibility of "integrating biodiversity into agriculture" remains unclear. Presumably, this refers to integrating biodiversity conservation goals, principles, and approaches with agricultural development goals and tasks.

Unfortunately, in our expert opinion, the Government predominantly views decarbonization in terms of reducing emissions from the energy sector, while agricultural tasks appear somewhat formal.

The value of this Strategy lies in the opportunity to advance biodiversity financing instruments based on the goals and tasks outlined in the Strategy, particularly in the areas of sustainable agriculture and sustainable forest use and restoration.

[34] https://adilet.zan.kz/rus/docs/U2300000121