IMPLEMENTATION OF THE KUNMING-MONTREAL GLOBAL BIOLOGICAL DIVERSITY FRAMEWORK (GBF) IN UZBEKISTAN

REPUBLIK of UZBEKISTAN

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Abstract. This article is devoted to the scientific study of the geographical and ecological foundations for implementing the requirements of the Kunming–Montréal Global Biodiversity Framework (GBF) in the context of Uzbekistan. The article analyses Uzbekistan's natural-geographical conditions, landscape structure, ecological resources and state of biodiversity, and substantiates the possibilities for implementing the GBF concept aimed at conserving global biodiversity at the regional level. The paper highlights the objectives and priority directions of the GBF, its role in international environmental policy, and practical experiences at the regional level, based on scientific sources.

Keywords: biological diversity, landscape diversity, protected natural areas, ecological networks, species protection index (SPI), climate change.

Introduction. In the XXI century, the deepening of global ecological problems, the rapid decline of biodiversity and the disruption of natural ecosystems have brought urgent tasks to the forefront for humanity.

Today, the issue of conserving biodiversity in Uzbekistan is of particular urgency. Climate change, landscape alterations, over-exploitation of land and water resources, and urbanisation processes are having a significant impact on the region's ecological stability.

The implementation of the Kunming–Montreal GBF programme in Uzbekistan requires a thorough study of the principles of rational use of natural geographical features, landscape structure, ecological potential and territorial resources. The GBF's ‘30×30 target’ – namely to place at least 30 per cent of terrestrial and marine areas under protection by 2030, restore natural ecosystems, reduce the impact of invasive species and ensure the sustainable use of biological resources [5, 6] such requirements at the regional level have significant scientific and practical importance. Countries around the world employ various approaches to integrate the GBF into their national environmental strategies. European Union member states are employing an integrated model based on ecological frameworks, green corridors and ensuring the ecological connectivity of landscapes. In

Southeast Asian and South American countries, however, the priority is set on restoring forest ecosystems, protecting water catchments and involving local communities in the process [8].

LITERATURE REVIEW AND METHODOLOGY. Today, the development of PNAs systems and the evaluation of their effectiveness are being extensively studied by international scientific schools. In this field, foreign scientists R.H. MacArthur, E.O. Wilson, N.F. Reymers, F.R. Stillmark and E.P. Odum have developed the theory of maintaining ecological connectivity between natural areas, which is crucial for the stability of ecosystems.

RESULTS AND DISCUSSION. The Kunming–Montreal Global Biodiversity Framework (GBF) was adopted in 2022 by the parties to the United Nations Convention on Biological Diversity (CBD) and represents a document that has ushered in a qualitatively new phase in global environmental policy for the XXI century. The GBF includes four strategic goals and 23 targets for the period up to 2030. At their core is the “30×30” initiative — that is, to protect 30 per cent of global areas by 2030, restore natural environments and reduce anthropogenic pressure. These principles remain relevant in the process of modernising Uzbekistan's environmental policy, necessitating a transition to a new phase of managing regional biological diversity.

In Uzbekistan, the first National Strategy and Action Plan for Biodiversity Conservation was adopted in 1998, and the second in 2019, both based on the 2010–2020 targets. The third programme, adopted in 2022, covers new goals and tasks for 2030 in line with the Kunming–Montréal Global Programme. It places special emphasis on expanding PNA, establishing new areas, and creating ecological networks.

According to the Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan, there are 7 nature reserves (222,397 ha), 1 landscape reserve (628,300 ha)

The coverage score for marine and oceanic areas in the Species Protection Index (SPI) is 60 points, while the score for terrestrial areas is 48 points. The highest score belongs to Western Europe, at 91 points. In Central Asia, the SPI value is 42 points, below the average, indicating the need for more active measures to protect biological species and natural ecosystems in the region. This situation sets the implementation of the Kunming–Montréal Global Biodiversity Framework (2022) objectives as an urgent task for the countries of Central Asia. The SPI is an integral indicator of countries' environmental policies on conserving biodiversity, protecting species' ranges, and ensuring ecosystem stability. The data in Table 1 for the Central Asian countries reveals important information about the effectiveness of environmental policy in the region, the spatial system of PNA, and changes in species' ranges.

In 2022, Uzbekistan ranked 140th in the SPI, scoring 22.8 points. This score is one of the lowest among Central Asian countries. At the same time, a positive ten-year trend in the country has recorded a 4.5-point increase, indicating some positive changes in environmental policy. Moreover, in recent years, significant activity has been observed in Uzbekistan's environmental policy. For example, the implementation of the 'Green Space' programme, the formation of an international eco-platform in the Aral Sea region, and the establishment of new PNA have contributed to an increase in the SPI indicator in 2025 (SPI – 42.6; rank – 107) contributed to an increase in the SPI score in 2025 (SPI – 42.6; 1-Table). However, although Uzbekistan's score is close to Kyrgyzstan's, the 10-year change shows a decrease of 0.5 points [7]. This may be related to the following factors: large-scale land reclamation and the expansion of agribusiness, water scarcity (the Aral Sea crisis), the reduction of arid ecosystems and forest areas, and the unchanged overall share of PNAs in some administrative units.

1-Table

Species Protection Index (SPI) of the Central Asian states

№	Countries	Species Protection Index (SPI) (out of all species)	Percentage of "epi" species (%)	Changes over the past 10 years (%)
1.	Kazakhstan	72	47.8	5.5
2.	Kyrgyzstan	105	42.8	13.7
3.	Uzbekistan	107	42.6	-0,5
4.	Turkmenistan	120	40.6	4.9
5.	Tajikistan	167	32.3	-4.9

When the composition of the existing PNAs network in Uzbekistan was analysed by natural geographic regions and provinces, significant differences were identified between them. For example, the area of PNAs (I, II, III and IV) in Tashkent Province (37.5%) and the Republic of Karakalpakstan (22.2%) exceeds the republic's average. The share of PNAs, which form the core of the ecological network in our republic, is 11.41%, while biosphere reserves account for 0.24%, state nature reserves 0.49%, landscape nature reserves 1.40% and nature parks 9.48%. In this regard, the nature parks are distinguished by their optimal size.

CONCLUSION AND RECOMMENDATIONS.

Global changes resulting from human activity demand a re-examination of the relationship between nature and society. From this perspective, PNAs are becoming not only a means of preserving natural heritage but also a tool for safeguarding humanity's sustainable future [8, 4]. According to the results of the

research conducted, it is necessary to develop the following three main directions to preserve biological and landscape diversity and ensure ecological stability:

– Expansion of the network of protected areas. In this regard, it is necessary to include new areas, selecting them on the basis of strategically important ecoregions and natural biogeographic barriers. Currently, approximately 14–15% of the republic's total area falls under protected-area categories, but it is emphasised that this figure must be raised to at least 30% to effectively conserve biodiversity [3].

– Ensuring ecological connectivity between landscapes. It is not only necessary to protect individual areas, but also to establish a system of “green corridors” connecting them. This creates opportunities for migration for natural populations and preserves genetic diversity.

– Strengthening management practices and increasing efficiency. As the authors point out, many countries have a legal framework for protected areas, but their institutional governance, financial support and monitoring systems are insufficient. Therefore, it is crucial to improve the PNAs system not only by increasing the number of sites but also by strengthening good governance, scientific oversight, and public participation.

– Optimising the indicators related to the Species Protection Index (SPI). Improving the situation with the SPI in Uzbekistan requires clear, prompt and long-term measures: expanding PNAs, ensuring biogeographic representativeness, ecological.

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