

Biodiversity conservation priorities of the Kyrgyz Republic till 2024

Introduction

Biological Diversity (hereafter - biodiversity) serves as the basis for creating the necessary conditions to ensure the functioning of ecosystems and ecosystem services for human survival and sustainable development of civilization, it contributes to the socio-economic development and the achievement of the Millennium Development Goals, including poverty reduction.

Loss of biodiversity can result the destabilization of the biota, loss of integrity of the biosphere and its ability to support the most important quality of the environment necessary for life on the Earth.

In 1996 the Kyrgyz Republic as a sovereign state and a subject of the international law joined to the Convention on Biological Diversity (hereafter – CBD), which was adopted at the Earth Summit in 1992 in Rio de Janeiro, Brazil, by the Law of the Kyrgyz Republic “On joining to the Convention on Biological Diversity”. It commits the country certain obligations under the international community, including development and implementation of priorities and action plans (Article 6 of the CBD).

In 2010 on the 10th Meeting of Conference of the Parties to the CBD in Nagoya (Japan) the Strategic Plan for the conservation and sustainable use of biodiversity for the period 2011-2020 was adopted, it includes five strategic goals and twenty targets (hereafter - the Aichi targets), which are aimed at improving the sustainability systems of protected areas; integration of measures on conservation and sustainable use of biodiversity in productive activities of landscapes, seascapes and sectors; capacity building for the implementation of the Cartagena Protocol on Biosafety; capacity building on the regulation of access to genetic resources and benefit-sharing; and the integration of the CBD obligations into the planning processes at the national level through enabling activities.

These priorities for biodiversity conservation of the Kyrgyz Republic for the period till 2024 (hereafter – Priorities) establish strategy, programme, principles and guidelines of the Kyrgyz Republic in the field of biodiversity conservation. On its basis, action plans (a set of staged measures on biodiversity conservation) of the Kyrgyz Republic are implemented.

Priorities are developed based on the discussions at the working meetings and round tables, reviews and expertise of materials, with the participation of representatives of the relevant ministries, administrative agencies, institutions of higher educational institutions (hereafter – the high schools), the public and independent experts. When setting priorities, we used data of the 4th National Report on Biodiversity of the Kyrgyz Republic.

1. Biological Diversity of the Kyrgyz Republic

The Kyrgyz Republic is situated in the heart of Eurasia, is surrounded by arid and extra arid plains of Central Asia, its natural habitat is experiencing hard impact of the desert zone extending in the Eastern hemisphere of the Earth: from the Sahara to the Gobi Desert. Distance to the ocean is about 3 thousand km, which determines the overall aridity and the continental climate of the country. The range of altitude is from 500 to 7134 m above sea level.

Rivers of the Kyrgyz Republic belong to the Central Asian draining basins: the Aral Sea, Tarim, Issyk-Kul, Balkhash; total annual runoff is about 50 thousand km. Welfare of the Central Asian people mostly depends of rivers starting in high mountains, and wellbeing of rivers entirely depends of integrity of natural ecosystems in their flow formation zones.

Almost 90 percent of republic's territory is located over 1500 meters. Comparative life wealth here becomes available thanks to high mountainous systems of Tien Shan and Pamir-Alay that reaches up to 7 thousand kilometers above sea level height and accumulates the moisture from upper coats of atmosphere.

High mountains look like islands of biological diversity among monotonous plains. The character of country's biodiversity reflects highness of significant part of territory, mountainous and alpine species prevail here.

Mountain ecosystems of the Kyrgyz Republic support a unique cluster of plants and animals. The territory of the Kyrgyz Republic has a high degree of concentration of biodiversity not only at the ecosystem, but also at the species level. In spite of the area of the Kyrgyz Republic has a fairly high diversity of species is about 1 percent of all known species on the Earth's surface of 0.13 percent.

Present time in the Kyrgyz Republic are about 166 viruses and bacteria, 3676 species of fungi and other lower plants, 3869 of higher plants, 101 species of protophyte, 14.600 insects and other arthropods, more than 1.5 thousand of other invertebrates, 75 species of fish, 4 amphibians, 33 reptiles, 390 birds, 84 mammals. The invertebrate fauna is not fully explored.

At the species level, vertebrates are studied fully and accurately: fishes, amphibians, reptiles, birds and mammals. For all of them cadastres, bulletins (Cadastre of genetic fund of the Kyrgyz Republic) published. Invertebrates studied unevenly. There are quite complete lists for individual groups existed.

Known part of the flora of lower plants is determined reliably. In different groups and parts of the republic a degree of exploration of varies from 20 to 90 percent.

Relatively extensively the flora of vascular plants is studied. The herbarium specimens of most species are existed. A list of the vascular plants of the Kyrgyz Republic, taking into account all the changes in their composition that have occurred since the publication of a multi-volume edition of "Flora of

the Kirghiz SSR” (1965), which allows consider more fully the existing species composition of vascular plants of the Kyrgyz Republic was developed.

Many species of animals like dhole (*Cuon alpinus*), otter (*Lutra lutra*), goitered gazelle (*Gazella subgutturosa*), such birds like great bustard (*Otis tarda* L.), imperial eagle (*Aquila heliaca*) are practically not being registered any more. Critically endangered wild pomegranate (*Punica granatum*), tulips: glitter tulip (*Tulipa nitida*), Ostrovskiy tulip (*T. ostrowskiana*), pink tulip (*T. rosea*). The main reason is disturbance of habitats due to economical activity and direct extermination by human being.

In extremely dangerous situation remain such rare species like grey monitor lizard (*Varanus griseus*), ibisbill (*Ibidorhyncha struthersii*), marbled polecat (*Vormella peregusna negans*), snow leopard (*Felis uncia*), and the Tien Shan brown bear (*Ursus arctos isabellinus*). A number of endemic species are also threatened such as the mollusc (*Siraphoroides moltschanovi*), that inhabit only in Ak-Terek tract of Fergana range, from plants it is relict *Otostegia nikitinae* (*Otostegia nikitinae*).

The most serious causes of biodiversity loss in the Kyrgyz Republic are fragmentation of habitat and reduction of the total area of habitat types, as well as biocenological consequences of anthropogenic influences. However, the role of the majority of species in ecosystems functioning and maintain their stable existence has not been studied fully. Inventory and monitoring of species diversity are conducted unsystematically, mainly on individual groups.

The Red Book of the Kyrgyz Republic includes 57 species of birds, 23 mammal, 2 amphibians, 8 reptiles, 7 species of fish, 18 arthropods, 83 higher plant species and 4 mushrooms.

As a result of human activity some species have disappeared at all, while others are endangered. The fauna of large and medium-sized mammals, 3 species have become extinct, 15 species are under the threat; the fauna of birds 4 species of birds are died off, 26 species are under the threat; plants losses are smaller; disappeared only one specie, 56 species are endangered.

Various global factors, as climate change impact on biodiversity, but this factor acts relatively slowly and imperceptibly; they are various natural disasters such as fires and others. The human activity mostly impacts on biodiversity.

Among the factors of anthropogenic nature, which threat to biodiversity are:

- poaching and other forms of logging in the forests of various types;
- obstacle natural forests restorations as a result of grazing;
 - degradation of natural pastures as a result of overgrazing;
 - destruction of areas of natural ecosystems as a result of mining activities;
 - reduction of forests area as a result of land acquisition for construction and other purposes;
 - over gathering of medicinal plants;

- overfishing of ichthyofauna in the main waters, which caused a reduction in the stock of most fish, including endemic;
- introduction of alien species, which caused the reduction the number of valuable fish species and endemics of the reservoir;
- poaching of large and medium-sized mammals.

Construction of roads, infrastructure, urban development sites, high voltage power lines causes fragmentation of natural communities, violates the natural migration paths and is one of the causes of death of certain species of birds and animals.

As a rule, mining activities carried out in the high, particularly fragile and vulnerable ecosystems, is the source of human disturbance, destruction and pollution of natural ecosystems of habitats of fauna and flora.

Its required close interaction among different stakeholders: government officials, civil society, universities, direct users of natural resources for effective solving of the conservation of biodiversity. An important role should be addressed at raising awareness and the formation of environmental friendly thinking and culture of the individual in the management of natural resources at the local, national and regional levels.

Modern comprehensive approach to environmental issues requires the development of a network of protected areas (hereinafter - SPNA), the protection of rare species of plants and animals listed in the Red Book of the International Union for Conservation of Nature (hereinafter - IUCN), and in the Red Book of the Kyrgyz Republic.

The Kyrgyz Republic has organized 90 different objects, forming a network of protected areas, with a total area of 1.2 million hectares, which is 6.0% of the country.

Despite the existing in the Kyrgyz Republic a steady trend of SPNAs expansion, the situation has deteriorated regularly, which could soon lead to the loss of the most valuable natural sites.

Present time the most urgent challenges of the Kyrgyz Republic for the SPNAs at this time are:

- the location of human settlements on the territory and within the boundaries of protected areas, which are engaged in business activities, often causing conflict situations;
- poor material and technical base;
- outdated methodology and approaches of conducting nature conservation, monitoring and evaluation of biodiversity;
- absence of the mechanism of development of eco-tourism;
- weak human resource capacity;
- lack of information about the real situation in the reserves and natural monuments, as well as in other categories of protected areas.

2. The history of the study of biological diversity of the Kyrgyz Republic

The history of the scientific study of the fauna and flora of the Kyrgyz Republic has a half-century, more than half of the species diversity has been studied over the past half-century, when the biota came to be studied systematically on the basis of local research centers.

It is difficult to review trends of biodiversity due to the the non-simultaneity and insufficient researches. Some species are known from single finds. Ranges of the majority of species, with the exception of abundant and widespread in the past, have not been determined. Complete species lists on individual areas are not available.

Quantitative researches by rodents and certain types of insect pests of agricultural crops were conducted during the 20-30's of the last century. The relatively regular census of the hunter-harvested species and geo-botanical was carried out since the 40-ies of 20th century. Later, estimation of stocks of medicinal plants began. Within the 70-80's of the last century extensive quantitative surveys of terrestrial vertebrates, mainly in the northern part of the Kyrgyz Republic were conducted.

In the late 80's – early 90-ies of the 20th century, these works had practically stopped. In fact reliable data on the current status and trends of biodiversity are absent due to weak monitoring.

3. State of supporting ecosystems

Mountain ecosystems of the Kyrgyz Republic support the unique plant and animal communities and are the center of origin of cultivated plants, repository of biodiversity and genetic fund of flora and fauna.

The state of biodiversity in the Kyrgyz Republic is mostly dependents on the sustainability of ecosystems. Each species is a part of a certain natural ecosystem and is s without this supporting ecosystem is not able to survive as a species. Issues of the biodiversity conservation in most cases related to the destruction, anthropogenic degradation of natural ecosystems.

In the Kyrgyz Republic, the area of disturbed ecosystems is close to the critical level. Natural ecosystems are essential factors in ensuring an enabling environment of human existence. Their normal functioning is not possible without conservation of characteristic of each species complex ecosystem. Reduction of the number of species results not only reduction of the overall biological productivity of ecosystems, but also impossibility to restore the normal ecosystem to irreversible degradation of the environment and the inability to ensure environmental sustainability, as well as its replacement of defective ecosystem.

The Kyrgyz Republic has 20 types of natural ecosystems ranging from alpine tundra analogues (high altitude desert and Alpica), middle analogues forests in mid-latitude to mid-mountain and lowland counterparts steppes and deserts, as well as aquatic ecosystems (wetland, lake, river).

About 10% of the territory is occupied by anthropogenic ecosystems. Natural ecosystems to some way are subject to anthropogenic impact, which disrupt their normal functions and the ability to maintain the natural diversity of species.

3.1. Forest ecosystems

The Kyrgyz Republic refers to sparsely wooded areas, forests are mainly represented by the mountain vegetation and is quite varied and rich by valuable species. About 90% of the forests of the Kyrgyz Republic are at a height of 700 to 3500 meters above sea level.

As of 1 January 2010, the forest area of the Kyrgyz Republic is 1.1 million hectares, or 5.61% of the total area of the country.

The forests of the Kyrgyz Republic in a view of its uniqueness and the large environmental values are of great importance in the global processes of regulation of the environment and prevention of negative changes in the climate. Brought forth on the mountain slopes, they help to prevent mudslides, prevent the formation of landslides and avalanches in mountains, regulate river flows, making them more evenly during the year. It is impossible to overestimate the importance of forests for the Kyrgyz Republic and the countries of Central Asia, where agriculture based on irrigation.

In this regard, according to the Forest Code of the Kyrgyz Republic, all forests of the republic are conserved, perform environmental, sanitation, health and other protective functions.

The forests of the Kyrgyz Republic are represented by four species: walnut-fruit, fir, spruce and floodplain forests.

3.2. Water ecosystems

Rivers, swamps, lakes refers to natural water ecosystems. Amongst them water flows are most widespread. Most large lakes are – Issyk-Kul, Son-Kul, Chatyr-Kul, Sary-Chelek. Issyk-Kul and Chatyr-Kul are situated in closed basins, rest belong to basin of Syr Darya.

Marshes occupy a small area. In the second half of the last century, most of them were drained. Aquatic ecosystems from a biological point of view are predominantly malokormnym reservoirs with relatively poor species composition of plants and animals. They inhabit a number of endemic species, which gives them a global significance. In the last century in the waters of the Kyrgyz Republic has offered more than a dozen alien species. Some of them were harvested, although the total catch is insignificant. Were stocked before bezrybnye Son-Kul Lake and Chater-Kul, resulting in the destruction of the original lake ecosystems and endangered nesting sites of rare aquatic and semi-aquatic birds, which contradicts the country's obligations arising from the accession to the Ramsar Convention.

Wetlands occupy a small area. In the second half of the last century, most of them were drained.

From the biologic point of view they mainly refer to water reservoirs with lower index of biodiversity basins with rather poor composition of plants and animals species. They inhabited by number of endemic species which give them global importance. In the last century water basins of Kyrgyzstan were inhabited by more than 10 types of alien fish species. Some of them become marketable, or though general catch is not significant. Lakes such as Son-Kul and Chatyr-Kul with no fish in the past were stocked, which resulted to demolition of initial lake ecosystem and put under threat nesting places of rare water and pre-water birds. This contradicts the country's liabilities that comes from joining to the Ramsar Convention.

3.3. Ecosystems of steppes and semideserts

Steppes and semideserts preserved in lowland areas and intermountain basins on the height ranging from 500 to 1000 meters above sea level. Their area is large and steadily reducing due to development under agrocenoses and urban landscapes. Importance of these ecosystems for biodiversity of the country is extremely high, as only in these ecosystems steppe and desert flora and fauna species, including rare and endangered inhabit: desert plants, reptiles, steppe species of birds, mammals.

3.4. Unique ecosystems

Unique for the Kyrgyz Republic is the ecosystem of walnut forests – rich in botanical composition of the community with the elements of relict forms of flora and fauna, including 49 endemic species of invertebrates and 12 species of plants. Zones of this ecosystem is located in the south-eastern slopes of Chatkal and south-western macroslope of Fergana ranges, as well as spruce-fir forests, where an endemic kind of fir is the dominant.

Another unique ecosystem is the ecosystem of the Issyk-Kul Lake, relating to the wetland ecosystems. Before the beginning of large-scale works on introduction of alien species into the Issyk-Kul Lake, its ichthyofauna included 16 species and subspecies of fish, most of which were endemic.

4. Genetic diversity

Genetic resources of the Kyrgyz Republic (medicinal plants, wild relatives of cultivated plants, etc.) are extremely rich and varied, but not studied fully. On the territory of the republic 1600 species of plants of wild flora grow, the largest number of useful species include such multispecies family as Poaceae (grass) – 224 species, Fabaceae (legumes) – 222, Asteraceae (bitmap) – 80,

Brassicaceae (cabbage) – 73, Rosaceae (rose) – 50, Alliaceae (onion) – 49 species, etc.

There are over 200 species of medicinal plants, among them special value: Karakol aconite (*A. karacolicum*), Turkestan motherwort (*Leonurus turkestanicus*), St. John's wort (*Hypericum perforatum*), a mother-and-stepmother vulgaris (*Tussilago farfara*), sea buckthorn (*Hippophae rhamnoides*) and others.

Nature of the republic is rich by wild plants that have economic value. These plants are licorice (*Glycyrrhiza glabra*), barberry (*Berberis*), barnyardgrass leafless (*Anabasis aphylla*), Fergana spurge (*Euphorbia ferganica*), thyme (various types) (*Thymus*), and others.

Especially valuable are the walnut-fruit forests on the south of the Kyrgyz Republic. Along with the great diversity of species there is a large variety of walnut-trees, apple, almond, pistachio, cherry plum, pear and others, which allowed to N.I.Vavilov refer walnut-fruit forests to one of the centers of origin of cultivated fruit plants. From this perspective, the array is the highest value as the guardian of the vast genetic fund.

In the Kyrgyz Republic the use of plant genetic resources is unsystematic, there are no mechanisms of cooperation with stakeholders at all stages, from getting access to genetic resources to the development of the final product, no system of transfer of reproductive material between countries. Researches on genetic testing are not being **conducted**, there is no seed nurseries and informational systems and other plant breeding.

Establishment of a germplasm bank (gene bank) is an important part of a strategy for conservation ex-situ gene pool of plants. Germplasm bank increases opportunities of reliable conservation and sustainable use of genetic resources, integrated into the system for creating collections of living plants in the botanical gardens and arboretum, and field gene banks and banks of the seedlings. The need to establish germplasm banks arises due to the fact that the preservation of the gene pool in the botanical gardens has certain disadvantages:

1. living collections contain only a small part of the genome of a species;
2. under conditions of culture a risk of spontaneous pollination in populations and hybridization with related species is increased, it can lead to erosion, or even gene loss of genotype specificity.

5. Legal and institutional frameworks for conservation of biological diversity of the Kyrgyz Republic

Basic principles of the state policy in the field of environmental protection and rational use of natural resources, including biodiversity are in the Environmental Security Concept of the Kyrgyz Republic, approved by the Decree of the President № 506 as of November 23, 2007, and in a Set of measures to ensure the environmental safety of the Kyrgyz Republic for 2011-2015, approved by the Decree of the Government № 599 of the Kyrgyz

Republic “On approval of a policy of the environmental security of the Kyrgyz Republic for 2011-2015” as of September 23, 2011.

According to the Decree of the President of the Kyrgyz Republic № 11 “On the National Sustainable Development Strategy of the Kyrgyz Republic for the period of 2013 – 2017” as of January 21, 2013 the National Strategy for Sustainable Development of the Kyrgyz Republic for the period 2013-2017 is approved, it includes the protection of the environment for sustainable development.

By the Decree of the Government of the Kyrgyz Republic № 218 “On approval of the draft Programme of the Kyrgyz Republic on the transition to sustainable development for 2013-2017” as of April 30, 2013 the Programme on transition to sustainable development of the Kyrgyz Republic for the period 2013-2017” was approved. One of the priorities of this Programme is the conservation of biodiversity and restoration of natural ecosystems in a condition of changing climate.

Relations in the field of biodiversity conservation in the Kyrgyz Republic are regulated by the Land Code of the Kyrgyz Republic, the Water Code of the Kyrgyz Republic and the Forest Code of the Kyrgyz Republic, the laws of the Kyrgyz Republic “On Environmental Protection”, “On Fauna”, “On the Protection and Use of Flora”, “On Specially Protected Natural Areas”, “On biosphere territories in the Kyrgyz Republic” and others, and also in accordance with adopted normative legal acts of the Kyrgyz Republic.

Existing normative legal acts of the Kyrgyz Republic regulate a wide range of legal relations related to the conservation of biodiversity, in particular, they set the standards and requirements for environmental protection during economic and other activities, they identify the types of environmental offenses, sanctions and procedure of liability, establish procedures for the use of natural resources, provide norms and quotas of exemption, consider protective and remedial measures.

They set a framework for the conservation and restoration of the most important complexes of species of flora and fauna, ecosystems and landscapes to a state of sustainable natural reproduction, maintenance and recovery of viable populations of species in their natural environment (in-situ) and the conservation of components of biological diversity outside their natural habitats (ex-situ).

Environmental legislation of the Kyrgyz Republic regulates relations in the field of biodiversity conservation, but due to the lack of mechanisms for community participation and benefits from biodiversity conservation, it does not fully meet modern international standards and requirements.

Government of the Kyrgyz Republic works on the improvement and harmonization of this legislation with the requirements of international treaties, agreements, and socio-economic conditions of their implementation.

Thus, noting new challenges and problems associated with global climate change, the Government of the Kyrgyz Republic by the Decree № 549 “On approval of the priority directions for adaptation to climate change in the Kyrgyz Republic till 2017” as of October 2, 2013 approved Priorities of the Kyrgyz

Republic on adaptation to climate change till 2017. These priorities consider the adaptation measures of main sectors: water resources, agriculture, human health, climate emergencies, forest resources and biodiversity.

Moreover, in order to conserve and restore the population of the snow leopard by the Decision of the Government of the Kyrgyz Republic № 732 “On Approval of the National Strategy for the conservation of the snow leopard in the Kyrgyz Republic for 2013-2023” as of October 19, 2012 the National Strategy for the conservation of the snow leopard in the Kyrgyz Republic for 2013 – 2023 was approved years. By the order of the Government of the Kyrgyz Republic № 320-r as of August 5, 2013 dated the Action Plan for implementation of this strategy for 2013 – 2017 was approved.

The Government of the Kyrgyz Republic approved the Priorities of the Kyrgyz Republic on conservation of wetlands by 2023 and the Action Plan to implement them on 2013-2017 by the Decree № 569 “On approval of the Priorities for the Conservation of Wetlands of the Kyrgyz Republic till 2023 and the Action Plan for the implementation of the priorities for the conservation of wetlands of the Kyrgyz Republic for 2013-2017” dated October 18, 2013.

Analysis of the situation in the field of biodiversity conservation demonstrates the presence of a weak partnership between public authorities, local state administrations and local self-government, the lack of clear responsibilities allocation, which barriers the timely and full their interaction with environmental decisions making.

Historically, most structures at the national level are involved in the conservation of natural resources and biodiversity, but operate discretely. In developed sectoral strategic documents of ministries and agencies of the Kyrgyz Republic biodiversity issues often are not considered.

Sharing and mutual use of data among state authorities and other organizations and institutions occur at the level of official complaints and inquiries, and, if necessary, through the establishment of inter-agency working groups for implementation of country environmental assessments of the state of environment and the factors, which impact on it.

It is necessary to organize the Coordination Committee for the Conservation of Biodiversity of the Kyrgyz Republic to coordinate the implementation of the priorities and action plans on the conservation of biodiversity of the Kyrgyz Republic.

Since these priorities are aimed at the implementation of commitments of the Kyrgyz Republic obligations under the CBD, for their implementation it is necessary to improve legislation and establish appropriate responsibilities for state bodies and local authorities, where specific responsible persons and bodies have to be identified.

6. Training of staff and sharing of information

Training of specialists in the field of biodiversity conservation at all levels of education is not being conducted. The current educational system of the republic the biodiversity issues are presented in such subjects as “The protection of the environment and life support”, “Sustainable development”, "Rational management of natural resources” and others.

Activities in the field of human resource development to ensure the conservation of biodiversity have to be aimed not only at training of staff, dealing with environmental protection and conservation issues, but also at the formation of environmental outlook, thinking and culture of the individual.

A number of universities train specialists in the field of biodiversity conservation: Kyrgyz National University named after J. Balasagyn, Kyrgyz National Agrarian University named K.Skryabina, Kyrgyz-Russian Slavic University named after B.Yeltsin, “Manas” Kyrgyz-Turkish University, Osh Technological University and others. Science policy for biodiversity conservation is formed mainly in research institutes of the National Academy of Sciences of the Kyrgyz Republic and in the number of universities involved in the preparation of doctors and candidates of sciences.

International organizations operating in the Kyrgyz Republic play a significant role in training of specialist, which organize field studies of kyrgyz specialists in scientific institutions of foreign countries, as well as assist in the conducting of international conferences to share information, innovative technologies and methods for biodiversity conservation.

With the aim to access to reliable information on the state of the environment to both public authorities and the general public, by the decision of the Government of the Kyrgyz Republic № 553 “On approval of the National Report on the State of the Environment of the Kyrgyz Republic for 2006-2011” as of August 7, 2012 the National Report on the state of the environment of the Kyrgyz Republic for 2006-2011 was approved, it bases on environmental indicators, taking into account international standards and requirements.

The implementation of these priorities requires the use of all the accumulated capacity for education and raising awareness of the importance of biodiversity and ecosystem services.

7. The value of the Priorities of biodiversity conservation of the Kyrgyz Republic

In accordance with the Strategic Plan for the conservation and sustainable use of biodiversity for the period of 2011-2020, including Aichi objectives adopted at the 10th Conference of the Parties of the CBD, the role of these Priorities is to take effective measures to conserve biodiversity and eliminate loss of biodiversity by 2020 to achieve the Concept of the Strategic Plan by 2050: biodiversity is valued, it is conserved, restored and wisely used,

maintaining ecosystem services and a healthy planet, delivering benefits essential for all humanity.

8. Targets and objectives of the Priorities of the biodiversity conservation of the Kyrgyz Republic

The main objective of these Priorities is the conservation and sustainable use of biodiversity in the Kyrgyz Republic for the sustainable socio-economic development.

Taking into account the needs and priorities of the Kyrgyz Republic in these Priorities 4 strategic targets and 13 objectives have been identified.

Strategic target 1. Integrate biodiversity conservation issue into the activities of state bodies and public organizations by 2020, as the basis of the human being and sustainable economic development of the Kyrgyz Republic

Objective 1.1. Raise the level of public awareness and government authorities the importance of supporting civic initiatives in the field of biodiversity conservation

In recent years the challenge of informational support of civil society, governmental and nongovernmental organizations in the field of environmental protection and sustainable development has become increasingly urgent.

Today an urgent issue is a lack of awareness of all stakeholders and target audiences, as well as the effectiveness of information campaigns in the conservation of biodiversity. This is due to a lack of information on the key thematic areas of biodiversity conservation, the low quality of communication processes, a lack of quality of informational materials, an inefficient use of distribution channels and unsystematic published materials on environmental protection in the media.

The society and state bodies do not consider priorities of biodiversity conservation at the appropriate level. Biodiversity conservation is considered as a functional duty of one specialized state agency. Civil society initiatives in this area are implemented fragmentally and unsystematically.

Activities in the field of human resource development to ensure the conservation of biodiversity should be directed not only at capacity building of professionals involved in environmental protection and conservation, but also at the shaping of environmental outlook, thinking and culture of the individual.

Key actions:

- develop and approve the issue of biodiversity and ecosystem services in the educational programs, culture, government agencies' plans and operational processes of all sectors and industries;

- raise awareness among the local population about the importance of biodiversity conservation and the role of ecosystem services, which support food security of the country, including the use of traditional knowledge and technologies based on the use of genetic resources;

– support civic initiatives on the protection of biodiversity and genetic resources, and to combat desertification.

Objective 1.2. Ensure coordination between policy, culture, knowledge and actions efficiency.

The Kyrgyz Republic has a number of institutions (community councils, specialized committees and others), which are aimed at providing assistance on coordinated actions in environmental issues, including biodiversity and ecosystems. Ongoing activities in the field of biodiversity conservation are not coordinated with each other and are not effective due to the lack of culture and mechanisms of the protection of nature, the accumulated knowledge.

Key actions:

– determine the effectiveness of the measures taken for the protection and restoration of biodiversity, generate and maintain a database of monitoring data

– develop a mechanism for involving the public in decision-making on the conservation and sustainable use of biodiversity, management of specially protected natural areas.

Objective 1.3. Integrate the issues of biodiversity conservation into economic decisions for the development of appropriate controls and limits the impact on biodiversity in all areas of natural resources management.

Economic decisions impact on biodiversity issues. These solutions address issues of biodiversity conservation on leftovers. There are no mechanisms to ensure proper control system and pressure limit on biodiversity in all areas of environmental management.

Key actions:

– identify in the ministries and departments functions on analysis of decisions taken in terms of biodiversity conservation and ecosystem's sustainability;

– improve the environmentally friendly standards and volume of use of natural resources;

– make an inventory of state land fund, taking into account the value to maintain biodiversity;

– introduce an electronic information systems for improving the management of natural resources;

– improve and unify the methodology for monitoring the state of biodiversity;

– analyze the existing system of interaction of state bodies in the field of the environment protection and rational management of natural resources.

Strategic target 2. Reduce the impact on biodiversity and promote its sustainable use.

Objective 2.1. Save and restore the most vulnerable ecosystems and genetic resources, significantly reduce the rate of species loss, degradation and fragmentation of their habitats.

In the Kyrgyz Republic, there is a wide variety of genetic resources, species and ecosystems, most of them are endangered. Anthropogenic pressure on biological diversity is high. A number of natural ecosystems destroyed in structural and species composition so that they lost the ability to normal productivity and self-reproduction. Degradation and fragmentation of natural communities, reducing the number and area of populations of vulnerable species are continuing, making it impossible for their sustainable use.

Key actions:

- specify subjects of nature, which are harmful to biodiversity;
- develop sectoral plans of support the sustainability of ecosystems, approaches of the environmental impact assessment and reduction its negative impact;
- take measures to restore the populations of endemic fish species till a level of sustainable use;
- improve the system of restrictions on imports or exports of endangered species, according to the requirements of Convention on International Trade in Endangered Species of Wild Fauna and Flora (hereafter – CITES);
- improve legislation in the field of biodiversity conservation.

Objective 2.2. Improve the management system in the field of biodiversity conservation.

In the Kyrgyz Republic, although there is a control system in the field of biodiversity conservation, the specifics of the local dynamics of the natural processes, cultural traditions of interaction with nature are not considered sufficiently.

Key actions:

- ensure governmental support to address the conservation and restoration of ecosystems and biodiversity, development of tourism, urban parks and green zones in human settlements;
- analyze and revise environmental legislation and regulations on the basis of functional changes in the government and local self-governments;
- develop a policy in the field of genetic resources, establishing a system of regulation an access to genetic resources and joint benefit-sharing;
- revise the system of statistical accounting of certain types of animals and birds, including the endangered and protected species;
- ensure operations of the Coordination Committee on biodiversity conservation.

Objective 2.3. Specify and classify invasive alien species by priority, as well as the ways of their introductions, and to prevent their introduction and distribution.

Invasive alien species are a threat to biodiversity and ecosystems, habitats and species habitat, which is expressed in the direct economic consequences, loss of crops and livestock production, the impact on fisheries and others.

The main factor contributing to the distribution of invasive alien species (pests, pathogens and weeds) in the Kyrgyz Republic, is the expansion of trade, scientific, technical and cultural ties among countries and the development of tourism.

Ensuring maximum safety from the penetration of quarantine objects that are missing in the country, conservation of biodiversity and environmental safety of the republic are assigned to the relevant authorities, which do not have well-developed plans for cooperation.

Key actions:

- improve the coordination of the activities of state agencies responsible for preventing the importation into the country of invasive alien species, which threaten to biodiversity and ecosystems;
- make an inventory and assessment of invasive alien species on priorities, as well as way of their introduction and distribution;
- improve the system of funding of actions.

Objective 2.4. Mobilize financial resources.

The current functioning of the control system in the field of biodiversity conservation is mainly funded by the budget.

Funding for biodiversity conservation is carried out on leftovers. Allocated funds from the republican and local budgets are insufficient.

Key actions:

- make an inventory and assessment and expenditures for the conservation of biodiversity;
- ensure proper use of funds, aimed at biodiversity and ecosystem conservation;
- develop new funding mechanisms for the conservation of biodiversity and establish a trust fund;
- develop mechanisms for generation of funds from use of biodiversity and ecosystem services.

Objective 2.5. Develop regional and international cooperation for the conservation of biodiversity.

With the participation of international donors and partners projects in the field of biodiversity conservation are being implemented. Initiatives on regional and international cooperation are not developed sufficiently, fragmented and inadequate.

Key actions:

- develop international partnerships to monitor the state of biodiversity and sharing of data;
- include the most important wetlands in the Ramsar List;
- create transboundary SPNAs;
- build capacity of the country on implementation of commitments of the Kyrgyz Republic on Cartagena Protocol on Biosafety.

Strategic target 3. Improve the protection and monitoring of ecosystems and species diversity.

Objective 3.1. Improve the system of SPNAs and environmental networks.

Key actions:

- establish new and expand the area of the existing SPNAs to increase the area up to 10% of the total territory of the Kyrgyz Republic by 2024;
- assign the status of SPNAs to the most significant wetlands;
- identify key areas for inclusion into the List of the World Cultural and Natural Heritage of UNESCO;
- Introduce the international system of economic valuation of biodiversity and effective management of SPNAs.

Objective 3.2. Improve the conservation of agro-biodiversity and the preservation of their wild progenitors.

The Kyrgyz Republic has a unique variety of agro-biodiversity – 93 local varieties of plants and several species of domestic animals. 132 species of ancestral forms of relatives of crop plants were identified. However, there are lack of adequate study, protection, reproduction and rational use of agricultural biodiversity, especially traditional breeds and ancestral forms of relatives of crop plants.

Key actions:

- develop Programmes on conservation of varietal and breed diversity, growing them on farms and nursery gardens and on promotion of activities on the economic breeding, rearing of local cultivars and breeds;
- define a set and structure and microorganisms used in traditional technologies of domestic production;
- strengthen the capacity and raise the status of the genetic bank of rare, endemic and vulnerable species and varieties of plants.

Strategic target 4. Improve the social importance of biodiversity and ecosystem services, increase the benefits of sustainable ecosystem services and traditional technologies.

Objective 4.1. Improve the social protection of local communities and vulnerable groups, increase their income from the use of biodiversity and ecosystem services.

Present time, the mechanisms for payments for ecosystem services are not developed. Interests of local communities and vulnerable populations are infringed, they are excluded from the process of rational, profitable use of natural resources.

Key actions:

- develop and implement measures on improvement management of biodiversity and ecosystems with a high socio-recreational status, medical and resort areas and recreation;

- ratify the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization and benefits of their use to CBD.

Objective 4.2. Increase the resilience of ecosystems, and thus increase the contribution of biodiversity to carbon stocks, contributing to climate change mitigation and adaptation and to combating desertification.

Growth of destructive pressure from almost all sectors leads to the destruction of a large part of natural ecosystems, especially forests. Reduction of the productivity and biodiversity of ecosystems deprives them the ability to adapt to climate change and desertification, which can cause a serious economic damage.

Key actions:

- develop a draft Programme of the Government of the Kyrgyz Republic on the rehabilitation of degraded land, considering the restoration of more than 10 per cent of degraded land;
- implement measures for sustainable development of mountain forests and land resources in the face of climate change on the area of 30 thousand ha.

Objective 4.3. At the national level to support traditional knowledge, innovations and practices of local communities on the use of biodiversity and ecosystem services in the implementation of traditional home industries.

To form a sustainable interrelation with nature, which was based on earlier relationships and traditions of the nomadic people to nature, which have been preserved in folk memory, but do not practiced. In modern conditions, the revival of this relationship to nature and traditions can contribute to the restoration of ecosystems and species, while increasing the resource capacity of wildlife, as well as contribute to the revival of a number of domestic industries that can alleviate poverty.

Key actions:

- review the existing traditional knowledge and technologies;
- develop regulatory and administrative measures to protect the rights of local communities to own the brand and technologies of traditional knowledge;
- mainstream the principles of the ecosystem approach to the use of traditional knowledge.

9. Monitoring and evaluation of the Priorities of biological diversity conservation of the Kyrgyz Republic

These priorities are developed for the medium-term period of ten years, i.e. for the period of 2014 – 2024, based on the dynamics and complexity of biodiversity's development.

The implementation of these priorities is monitored through providing a systematic analysis and evaluation of the activities. Based on the date of monitoring the effectiveness of the implementation of priorities will be evaluated. The progress achieved and gaps in implementation of the Action Plans will be analyzed in details. The decision to develop measures and actions, the redistribution of resources and their optimal use will be taken on the basis of these results.

To ensure effective implementation of these priorities and to identify deviations from the targets and objectives, analysis and development of the necessary measures for the conservation and sustainable use of biodiversity a short-term progress is being evaluated. A short-term evaluation of the implementation of the Action Plan also will be implemented in 2020 and 2024.

Effectiveness of the implementation of the Programme will be determined by a group of independent experts.

10. Action Plan for the implementation of the priorities of biological diversity conservation of the Kyrgyz Republic

According to the decision of the Government of the Kyrgyz Republic the provisions of these priorities will be carried out through the implementation of a staged action plan on the conservation of biological diversity of the Kyrgyz Republic: the first stage in the period of 2014-2020, the second stage in the period of 2020-2024.

The strategic targets and objectives of the Action Plan will be achieved by the consolidated measures of stakeholders: the National Academy of Sciences of the Kyrgyz Republic, the ministries and administrative institutions, local state administrations and local self-governments, non-governmental organizations and associations, as well as international donor organizations. Most of the activities will be implemented in the framework of international projects funded by GEF, UNDP, FAO, UNEP, WWF, KOICA and others.

This scheme of implementation of the Action Plan ensures interagency cooperation, the involvement of the interested ministries and administrative institutions, public organizations and associations, local authorities and the public.

Reports on implementation of the Action Plans of ministries and administrative institutions will be submitted annually to the state environmental authority of the Kyrgyz Republic for the summarizing and analysis.

11. Funding

To implement these priorities all funding resources, which are not prohibited by the legislation of the Kyrgyz Republic will be used.

Funding of the Action Plan for the implementation of the priorities of biological diversity conservation of the Kyrgyz Republic will be carried out in the framework of the resources allocated by state authorities of the Kyrgyz

Republic from the national budget on the relevant year, as well as grants of international donor organizations.

Approved
by the Decree of the Government
of the Kyrgyz Republic

**Action Plan for
implementation of biodiversity conservation priorities of the
Kyrgyz Republic for 2014-2020**

Strategic targets	Objectives	Actions	Timeframe	Responsible parties for implementation	Total amount of funds, thousand soms	Sources of Funding	Form of implementation	Expected outputs
1	2	3	4	5	6	7	8	9
1. Integrate biodiversity conservation issue in the activities of state bodies and public organizations, as the basis of the human	1.1. Raise the level of public awareness and government authorities the importance of supporting civic initiatives in the field of biodiversity	1.1.1. Develop and approve the issue of biodiversity and ecosystem services in the educational and cultural programmes, plans and operational processes of government agencies	2016-2020	MES, NAS, SAEPF, MAM, ME, MCIT	176,6	In the framework of the funds of SAEPF, MES, MCIT for the relevant year, grant funds of international donor organizations	Establishing joint working groups, implementation of projects	The issue of biodiversity and ecosystem services is integrated into educational and cultural programmes, plans and operational processes by decisions of government authorities
		1.1.2. Develop draft of methods on estimation of environmental services	2016-2018	SAEPF, NAS, MAM, ME	141,2	In the framework of the funds of SAEPF, NAS,	Establishing joint working groups	Methods of estimation ecosystem

being and sustainable economic development of the Kyrgyz Republic	conservation					MAM and ME for the relevant year		services are approved by the Decree the Government of the Kyrgyz Republic
		1.1.3. Raise awareness among the local population about the importance of biodiversity conservation and the role of ecosystem services, which support food security of the country, including the use of traditional knowledge and technologies based on the use of genetic resources	2014-2020	MCIT, SAEPF, MAM, NAS, SALSGIA, ME, LSGA, MASS MEDIA, Kyrgyz-patent	247,2	In the framework of the funds of MCIT, SAEPF, NAS, MAM, ME, SALSGIA for the relevant year	Establishing joint working groups	Campaigns, highlights in the media the importance of biodiversity conservation and the role of ecosystem services to support food security are conducted
		1.1.4. Support civic initiatives on the protection of biodiversity and	2014-2020	MAM, SAEPF, SALSGIA, LSA, LSGA	123,6	In the framework of the funds of MAM, SAEPF, SALSGIA, LSA	Establishing joint working groups, implementation of projects	By decisions of the state bodies, LSGA and LSGA

		genetic resources, and to combat desertification				и LSGA for the relevant year		took measures on ensuring the protection of biodiversity and genetic resources
		1.1.5. Develop draft standards of value of biodiversity and ecosystem services of key ecosystems	2017	NAS, MES, SAEPF, MAM	58,9	In the framework of the funds of SAEPF for the relevant year	Establishing joint working groups, implementation of projects	Draft standards of value of biodiversity and ecosystem services of key ecosystems are developed
	Total:				747,5			
	1.2. Ensure coordination between policy, culture, knowledge and actions efficiency	1.2.1. Determine the effectiveness of the measures taken for the protection and restoration of biodiversity, generate and maintain a database of monitoring data	2015-2016	NAS, SAEPF, MAM, MEs, NSC	176,6	In the framework of the funds of SAEPF, MAM, MEs, NSC и NAS for the relevant year	Establishing joint working groups	Measures for protection and reproduction of biodiversity, management of monitoring data are identified by the decisions of state agencies
		1.2.2. Stimulate scientific researches to	2015-2018	NAS, MAM, SAEPF	105,9	In the framework of	Establishing joint working	Research institutions are

		identify genetic criteria and biodiversity's identification				the funds of SAEPF, MAM, NAS for the relevant year	groups	assisted and supported researches on identification genetic criteria and biodiversity
		1.2.3. Identify the valuable genetic resources used in the technologies of traditional domestic and agricultural industries	2016	NAS, MAM, SAEPF	44,1	In the framework of the funds of SAEPF for the relevant year	Establishing joint working groups	A list of the valuable genetic resources is made
		1.2.4. Organize and conduct training courses for specialists of state agencies on biodiversity and ecosystem services, genetic resources and sustainable management of natural resources	2015-2020	SAEPF, MES, NAS, MAM	141,2	In the framework of the funds of SAEPF, MES, NAS, MAM for the relevant year	Establishing joint working groups	Training courses for specialists of state agencies on biodiversity and ecosystem services, genetic resources and sustainable management of natural resources are

								organized and conducted
		1.2.5. Develop a mechanism for involving the public in decision-making on the conservation and sustainable use of biodiversity, management of specially protected natural areas	2015	SAEPF, NAS, MAM, SALSGIA, LSA and LSGA	58,9	In the framework of the funds of SAEPF for the relevant year	Establishing joint working groups	Mechanism for involving the public in decision-making on the conservation and sustainable use of biodiversity, management of specially protected natural areas is developed
	Total:				526,7			
	1.3. Integrate the issues of biodiversity conservation into economic decisions	1.3.1. Identify in the ministries and departments functions on analysis of decisions taken in terms of biodiversity conservation and ecosystem's sustainability	2015	SALSGIA, LSA, City administrations (on agreement)	29,4	In the framework of the funds of SAEPF, SALSGIA, LSA for the relevant year	Establishing joint working groups	By decisions of the state bodies, LSA and LSGA identified responsible people for the conservation of biodiversity and ecosystem resilience

for the development of appropriate controls and limits the impact on biodiversity in all areas of natural resources management	1.3.2. Improve the environmentally friendly standards and volume of use of natural resources	2014-2020	SAEPF, ME, MEI, SAGMR, NAS, MAM, LSGA, LSA	247,2	In the framework of the funds of ME, SAEPF, MEI, SAGMR, NAS, MAM, LSA, LSGA for the relevant year	Establishing joint working groups	A draft legal act, which considers the introduction of changes and amendments to existing standards and volume of use of natural resources is developed
	1.3.3. Make an inventory of state land fund, taking into account the value to maintain biodiversity	2019	MAM, SAEPF, NAS, SRS	58,9	In the framework of the funds of MAM, SAEPF и SRS for the relevant year	Establishing joint working groups	The lands taking into account the value to maintain biodiversity are identified under the inventory of the land fund
	1.3.4. Conduct a research of the ecosystem of the Issyk-Kul Lake to	2015-2020	NAS, MAM, SAEPF,	15326,0	In the framework of the funds, grants of international	Implementation of projects	The research of state of the ecosystem of the Issyk-Kul

		develop the Strategic Development Plan of Issyk-Kul region				donor organizations		Lake is conducted, the number of key ecosystems and their state are determined
		1.3.5. Introduce an electronic information systems for improving the management of natural resources	2020	NAS, MAM, SAEPF,	58,9	In the framework of the funds, provided for state bodies for the relevant year	Establishing joint working groups	An electronic database is developed. The areas managed electronically are increased
		1.3.6. Improve the methodology for monitoring the state of biodiversity	2016-2020	NAS, SAEPF, MAM, NSC	88,3	In the framework of the funds, provided for state bodies for the relevant year	Establishing joint working groups	New methodologies for monitoring the state of biodiversity are developed
		1.3.7. Introduce the practice of supporting the implementation of the “green economy” methods, the gradual transition to environmentally friendly and energy	2015-2018	ME, MEI	82,4	In the framework of the funds, provided for state bodies for the relevant year	Establishing joint working groups	The “green economy” methods are developed and applied

		efficient technologies						
		1.3.8. Develop practical recommendations for improving the energy efficiency of buildings	2015	SAACHS, SAEPF	708,0	In the framework of the funds, provided for state bodies for the relevant year, grant funds of international donor organizations	Implementation of projects with involvement of professionals and experts	Recommendations for LSGA and LSA are developed
		1.3.9. Analyze the existing system of interaction of state bodies in the field of the environment protection and rational management of natural resources	2014-2017	SAEPF, MAM, SIETS, LSA	1537,7	In the framework of the funds, provided for state bodies for the relevant year, grant funds of international donor organizations	Establishing joint working groups, implementation of projects	A draft normative legal act to improve interaction between state bodies on issues of environmental protection and rational management of natural resources is developed
	Total:				18136,7			
	Total on Strategic target 1:				19410,9			

2: Reduce the impact on biodiversity and promote its sustainable use	2.1. Save and restore the most vulnerable ecosystems and genetic resources, significantly reduce the rate of species loss, degradation and fragmentation of their habitats	2.1.1. Specify subjects of nature, which are beneficial and harmful to biodiversity	2015	SAEPF, MAM, SIETS	44,1	In the framework of the funds, provided for state bodies for the relevant year	Establishing of expert groups	Subjects of nature with the benefits and harmful to biodiversity are identified
		2.1.2. Develop sectoral plans of support the sustainability of ecosystems, approaches of the environmental impact assessment and reduction its negative impact	2015	SAEPF, MAM, MH, MEP, MEI, SALSGIA, LSGA, LSA	88,3	In the framework of the funds, provided for state bodies for the relevant year	Establishing of expert groups	By decisions of state bodies, sectoral plans of support the sustainability of ecosystems, approaches of the environmental impact assessment and reduction its negative impact are approved by LSA and LSGA
		2.1.3. Take measures to restore the populations of endemic fish species till a level of sustainable use	2014-2020	MAM, NAS, SAEPF, LSA	164,8	In the framework of the funds, provided for state bodies for the relevant year	Establishing of monitoring and expert groups	By decisions of state bodies, LSA и LSGA approved measures to restore endemic fish species

		2.1.4. Improve the system of restrictions on imports or exports of endangered species, according to the requirements of CITES	2014-2020	SAEPF, SIETS, NAS	123,6	In the framework of the funds of SAEPF for the relevant year	Establishing of strategic group	Joint regulations to strengthen control of import or export of endangered species, according to the requirements of CITES are approved by SAEPF, SIETS and NAS
		2.1.5. Develop a draft Programme on the conservation of walnut-fruit forests of the Kyrgyz Republic	2015	SAEPF, NAS, Administrations of the Government's Representative Office in Djalal-Abad and Osh regions	296,6	In the framework of the funds of SAEPF for the relevant year, implementation of project	Establishing of expert groups	A draft Resolution of the Government of the Kyrgyz Republic on the approval of the Programme on the conservation of walnut-fruit forests of the Kyrgyz Republic is developed
		2.1.6. Develop a draft the Governmental	2016	MAM, NAS, SAEPF	44,1	In the framework of	Implementati on of project	Drafts of Resolutions of

		Programme for the rehabilitation of degraded pastures				the funds, provided for state bodies for the relevant year		the Government and the Parliament on the approval of the Governmental Programme on the rehabilitation of degraded pastures are developed
		2.1.7. Update the Action Plan to Combat Desertification in the Kyrgyz Republic	2014-2015	MAM, NAS	7355,4	Grant funds of international donor organizations	Implementation of project	Grant fund for the development of the updated Action Plan to Combat Desertification in the Kyrgyz Republic is raised
		2.1.8. Support initiatives of local communities on reforestations and plantations, development of plantations of fast-growing trees	2014-2020	SAEPF, LSGA, LSA	168210,8	In the framework of the funds, provided for state bodies for the relevant year, grant funds of international donor	Establishing of expert groups, implementation of projects	Joint activities on defining areas for reforestation, measures on forests planting, the development of plantations of

						organizations		fast-growing trees are implemented
		2.1.9. Create Centers of forest seed farming and monitor forest pests in forestries of the Kyrgyz Republic	2014-2017	SAEPF	42031,3	In the framework of the funds of SAEPF for the relevant year, grant funds of international donor organizations	Implementation of project, involvement of experts and consultants	In forestries of the Kyrgyz Republic created forest seed storages, seed laboratories
		2.1.10. Develop draft of regulations and rules of hunting in the Kyrgyz Republic	2015	SAEPF, NAS	29,4	In the framework of the funds of SAEPF for the relevant year	Establishing of working groups	A draft resolution of the Government of the Kyrgyz Republic on approval of the right to hunt on the territory of the Kyrgyz Republic
		2.1.11. Develop a draft Regulation on the establishment limits and allocation of quotas on hunting of wild animals on the territory of the Kyrgyz Republic	2014	SAEPF, NAS	29,4	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	A draft Decree of the Government of the Kyrgyz Republic on approval the Regulation on the establishment

								limits and allocation of quotas on hunting of wild animals on the territory of the Kyrgyz Republic is developed
	2.1.12. Develop Programme for sustainable development of the “Issyk-Kul” eco-economic system	2014	SAEPF, NAS, Administration of the Government’s Representative Office in Issyk-Kul region	2583,5	In the framework of the funds of SAEPF for the relevant year, grant funds of international donor organizations	Establishing of expert groups, implementation of projects	A draft Decree of the Government of the KR on approval of the Programme for sustainable development of the “Issyk-Kul” eco-economic system is developed	
	2.1.13. Conduct forest plantations on lands of the forest fund of the area of 1000 ha annually	2014-2017	SAEPF	427278,3	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	Forest plantations on lands of the forest fund of the area of 1000 ha are conducted annually	
	Total:			648279,7				

	2.2. Improve the management system in the field of biodiversity conservation	2.2.1. Ensure governmental support to address the conservation and restoration of ecosystems and biodiversity, development of tourism, urban parks and green zones	2014-2020	SAEPF, MCIT, MAM, ME, SALSGIA, LSA, LSGA, City administrations (on agreement)	206,0	In the framework of the funds, provided for state bodies for the relevant year	Establishing of interagency working group	Measures of administrative and legal support to address the conservation and restoration of ecosystems and biodiversity are developed
		2.2.2. Analyze and revise environmental legislation and regulations on the basis of functional changes in the government and local self-governments	2015	SAEPF, SIETS, MAM, SAGMR, MH, ME, SALSGIA, LSGA, LSA	439,2	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	Legislation and regulations are analyzed, a draft decision of the Government of the Kyrgyz Republic to harmonize with legislation of the Kyrgyz Republic is developed
		2.2.3. Develop a simplified and cost-effective methodology for hunting management activities	2016	SAEPF, NAS	29,4	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	Methodology of hunting activities is developed and approved by the order of SAEPF
		2.2.4. Develop	2015	ME, NSC,	201,4	In the	Involvement	Indicators to

		indicators to measure “green growth” progress		SAEPF		framework of the funds, provided for state bodies for the relevant year, grant funds of international donor organizations	of experts and consultants, implementation of project	measure “green growth” progress are developed
		2.2.5. Develop and approve the Regulations on maintaining cadastre of rare and endangered species of animals and plants on the territory of the Kyrgyz Republic	2014	SAEPF, NAS	29,4	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	A draft regulations on maintaining cadastre of rare and endangered species of animals and plants on the territory of the Kyrgyz Republic
		2.2.6. Develop a legislative act in the field of genetic resources, establishing a system of regulation an access to genetic resources and joint benefit-sharing	2015-2020	SAEPF, NAS, MAM, SIETS	141,2	In the framework of the funds, provided for state bodies for the relevant year	Establishing of interagency working group	A draft of legislative act in the field of genetic resources, establishing a system of regulation an access to genetic resources and

								joint benefit-sharing is developed
		2.2.7. Revise the system of statistical accounting of certain types of animals and birds, including the endangered and protected species	2019-2020	SAEPF, NSC, NAS	1584,8	In the framework of the funds of SAEPF for the relevant year, grant funds of international donor organizations	Establishing of working group, implementation of project	A statistical accounting of the species of animals and birds, including the endangered and protected species is updated and approved
		2.2.8. Develop a legislative act of pasture management on the territory of the State Forest Fund and SPNAs	2014 - 2015	SAEPF, SIETS, MAM, LSA	44,1	In the framework of the funds of SAEPF for the relevant year	Establishing of expert groups	A draft resolution of the Government of the Kyrgyz Republic on approval of the Regulation on the use of pastures on the territory of the State Forest Fund and SPNAs is developed
		2.2.9. Create a favorable economic	2015	Kyrgyz-patent	14,7	In the framework of	Establishing of working	Innovative projects in the

	and legal environment for innovation activities in the field of sustainable use of biodiversity				the funds of Kyrgyzpatent for the relevant year	group	field of sustainable natural resources management, including biodiversity are developed
	2.2.10. Develop a draft legislative act to strengthen the responsibility for compliance with the State Environmental Expertise	2015	SAEPF, SIETS, SIVFSS	4936,5	In the framework of the funds, provided for state bodies for the relevant year, grant funds of international donor organizations	Establishing of working group, implementation of project	The analysis is conducted and a draft of normative legal act to strengthen the responsibility to meet requirements of the State Environmental Expertise is developed
	2.2.11. Analyze and develop regulatory mechanisms to encourage enterprises in the implementation of environmental, resource-saving and low-waste technologies	2014-2017	SAEPF, ME, SIETS	19371,4	In the framework of the funds, provided for state bodies for the relevant year, grant funds of international donor organizations	Establishing of working group, implementation of project	Recommendations on the introduction of resource-saving technologies are developed
	Total:			26998,3			

2.3. Specify and classify invasive alien species by priority, as well as the ways of their introduction s, and to prevent their introduction and distribution on the territory of the Kyrgyz Republic	2.3.1. Develop a list (cadastre) of the most dangerous invasive alien species	2015	SAEPF, MAM NAS, MH	58,9	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	The list of the most dangerous invasive alien species is approved by joint decisions of state authorities
	2.3.2. Develop a system of control of invasive alien species, sanitary and phytosanitary measures of its control	2016	NAS, MH, MAM, SAEPF, SIETS, SIVFSS	88,3	In the framework of the funds, provided for state bodies for the relevant year	Establishing of expert groups	Sanitary and phytosanitary measures to combat invasive species are identified by the decisions of state bodies and implemented
	2.3.3. Establish and support operations of interagency working group on invasive alien species	2014-2020	SAEPF, MF , ME, MAM	164,8	In the framework of the funds, provided for state bodies for the relevant year	Involvement of experts and consultants	An interagency working group on invasive alien species is established and operates by the decision of SAEPF
	Total:			312,0			
2.4. Mobilize financial	2.4.1. Make an inventory and assessment and	2015-2016	MF, ME, SAEPF, MAM, NAS ,	247,2	In the framework of the funds,	Establishing of working group on	Financial resources for the

	resources	expenditures for the conservation of biodiversity		SALSGIA, LSGA, LSA,		provided for state bodies for the relevant year	inventory and assessment	conservation of biodiversity are analyzed
		2.4.2. Improve the coordination of the use of donor funds for the conservation of biodiversity and ecosystems	2014	MF, ME, SAEPF, MAM, NAS, SALSGIA	88,3	In the framework of the funds, provided for state bodies for the relevant year	Establishing group on projects coordination	Coordination function is included in the Interagency Coordinating Council on the implementation of environmental conventions
		2.4.3. Develop new funding mechanisms for the conservation of biodiversity and establish a trust fund	2014-2020	MF, ME, MJ, MFA, SAEPF, MAM	247,2	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	A draft legal act considering the funding mechanism for the conservation of biodiversity, the establishment of a trust fund is developed
		2.4.4. Ensure proper use of funds received from the use of biodiversity and ecosystem services	2015	MF, ME, MCIT, MAM, SAEPF	73,6	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	Control over the use of funds received from the use of biodiversity and ecosystem services is ensured be

								decisions of state bodies
		2.4.5. Increase the capacity of governmental structures and state agencies on mobilization of financial resources	2015	MF, ME, SAEPF	44,1	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	Trainings on awareness raising are conducted and built capacity of administrative structures and those state agencies to mobilize financial resources
		2.4.6. Develop a system of small grants, interest-free loans and micro-credit projects for biodiversity conservation	2016 – 2017	MF, ME, SAEPF	29,4	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	Draft regulations on funding mechanisms of programmes and projects are developed
	Total:				729,8			
	2.5. Develop regional and international cooperation for the conservation of biodiversity	2.5.1. Create transboundary SPNAs	2020	SAEPF, NAS, LSGA, LSA, SRS	44,1	In the framework of the funds, provided for state bodies for the relevant year, grant funds of international donor	Establishing of working group, implementation of project	Legal negotiations with the authorities of neighboring countries in the field of environmental protection and

						organizations		international organizations for the creation of transboundary SPNAs are conducted
		2.5.2. Develop international partnerships to monitor the state of biodiversity and sharing of data	2015-2020	SAEPF, MFA, ME	105,9	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	Relations and partnerships among institutions are built
		2.5.3. Include the most important wetlands in the Ramsar List	2018	SAEPF, NAS, MEs, SALSGIA, LSA	58,9	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	The list of the most important wetlands for inclusion in the international list is developed and submitted to the Secretariat of the Ramsar Convention
		2.5.4. Develop project proposals to monitor the implementation of 3 Rio Conventions and submit them to the UNDP and GEF	2014-2016	SAEPF, UNDP	27313,7	In the framework of the funds of SAEPF for the relevant year, grant funds of international	Involvement of experts and consultants, implementation of project	Project on monitoring the implementation of 3 Rio Conventions on biodiversity,

						donor organizations		climate change and combat desertification is implemented
	Total:				27522,6			
Total on strategic target 2:					703842,4			
3. Improve the protection and monitoring of ecosystems and species diversity	3.1. Improve the management system of SPNAs and environmental networks	3.1.1. Develop a draft Programme on Development SPNAs of the Kyrgyz Republic	2014-2016	SAEPF, NAS, SRS, SALSGIA	14,7	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	A draft of the Programme on SPNAs Development of the Kyrgyz Republic is elaborated
		3.1.2. Develop a draft of the Regulations on the mechanism of creation of SPNAs in the Kyrgyz Republic	2014	SAEPF, NAS, SRS	29,4	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	A draft Decree of the Government of the Kyrgyz Republic on approval of the Regulations on the mechanism of creation of SPNAs in the Kyrgyz Republic is developed
		3.1.3. Establish new and expand the area of the existing SPNAs to increase the area up to 10% of the total territory of the Kyrgyz	2014 – 2020	SAEPF, NAS SRS, SALSGIALS GA, LSA	164,8	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	The work with state agencies, LSA and LSGA on the organization of new and

		Republic by 2024						expand the areas of existing SPNAs isconducted
		3.1.4. Assign the status of SPNAs to the most significant wetlands	2015	SAEPF, NAS, SALSGIA	44,1	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	The most important wetlands are identified, a draft of the Government of the Kyrgyz Republic to assign them the status of SPNAs is developed
		3.1.5. Update and develop management plans of SPNAs	2015-2016	SAEPF, NAS	23,5	In the framework of the funds of SAEPF for the relevant year, grant funds of international donor organizations	Establishing of working group, involvement of experts	Management plans of SPNAs are approved by the decision of SAEPF
		3.1.6. Review the status and make an inventory of State Reservations	2015-2016	SAEPF, NAS , SIETS SALSGIA, LSA, SRS	6221,4	In the framework of the funds of SAEPF for the relevant year, grant funds of	Establishing of working group, involvement of experts	State Reservations and natural monuments are determined

					international donor organizations			
		3.1.7. Approve the list of planned SPNAs in accordance with the recommendation of the GEF-UNDP-WWF “Econet - Central Asia”	2016 – 2017	SAEPF, NAS, SIETS, SALSGIA, LSA, SRS	73,6	In the framework of the funds of SAEPF for the relevant year, grant funds of international donor organizations	Establishing of working group, involvement of experts	The list of planned SPNAs is approved by the decision of SAEPF
		3.1.8. Identify key areas for inclusion into the List of the World Cultural and Natural Heritage of UNESCO	2019	SAEPF, NAS, MES, MCIT	58,9	In the framework of the funds of SAEPF for the relevant year, grant funds of international donor organizations	Establishing of working group, involvement of consultants	Key areas for inclusion into the List of the World Cultural and Natural Heritage of UNESCO are determined
		3.1.9. Introduce the international system of economic valuation of biodiversity and effective management of SPNAs	2015-2018	SAEPF	4992,2	In the framework of the funds of SAEPF for the relevant year, grant funds of international donor organizations	Establishing of working group, involvement of consultants	Funds to develop system of economic valuation of biodiversity and effective management of SPNAs are found
		3.1.10. Develop and maintain a systematic	2015	SAEPF	1395,1	In the framework of	Involvement of experts,	Procedure of maintaining a

		cadastre of SPNAs of the Kyrgyz Republic				the funds of SAEPF for the relevant year, grant funds of international donor organizations	implementation of project	systematic cadastre of SPNAs of the Kyrgyz Republic is approved by the decision of SAEPF
	Total:				13106,0			
3.2. Improve the conservation of agrobiodiversity and the preservation of their wild progenitors	3.2.1. Develop Programmes on:	2015	MAM, NAS, SAEPF	29,4	In the framework of the funds of SAEPF for the relevant year	Involvement of experts	Programmes to encourage and support the development of agrobiodiversity; creation of an electronic database of varietal and breed diversity of species are designed by MAM	
	3.2.2. Define a set and structure and microorganisms used in traditional technologies of domestic production	2017	MAM NAS, SAEPF	29,4	In the framework of the funds of MAM for the relevant year	Conducting scientific researches	Strains of home technology are refined	
	3.2.3. Strengthen the capacity and raise the	2017	MAM, NAS, SAEPF	29,4	In the framework of	Establishing of working	Measures to ensure long-	

		status of the genetic bank of rare, endemic and vulnerable species and varieties of plants				the funds of MAM for the relevant year	group	term storage of commercially valuable varieties and forms of plants are taken by Decision of MAM and SAEPF
	Total:				88,3			
Total on Strategic target 4:					13106,0			
4. Improve the social importance of biodiversity and ecosystem services, increase the benefits of sustainable ecosystem services and traditional technologies	4.1. Improve the social protection of local communities and vulnerable groups, increase their income from the use of biodiversity and ecosystem services	4.1.1. Develop and implement measures on improvement management of biodiversity and ecosystems with a high socio-recreational status, medical and resort areas and recreation	2015-2018	MH, SAEPF, NAS, ME, MAM, SALSGIA, LSGA, LSA	141,2	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working groups	Measures on improvement management of biodiversity and ecosystems with a high socio-recreational status, medical and resort areas and recreation are taken by decisions of state bodies
		4.1.2. Increase the share of the local community in income generation from ecosystem services	2014-2020	ME, SALSGIA, SAEPF, LSGA, LSA	123,6	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working groups	Measures to encourage the local population to generate income from

								ecosystem services are taken by the decisions of state bodies
	4.1.3. Ratify the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization	2014	SAEPF, NAS, Kyrgyz-patent	44,1	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	A draft Laow on ratification of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is developed	
	Total:			309,0				
4.2. Increase the resilience of ecosystems, and thus increase the contribution of	4.2.1. Develop a draft Programme of the Government of the Kyrgyz Republic on the rehabilitation of degraded land, considering a recovery of more than 10% degraded lands	2017	MAM, SAEPF, NAS	44,1	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	A draft decree of the Government of the Kyrgyz Republic on the Programme on the rehabilitation of degraded lands is developed	

biodiversity to carbon stocks, contributing to climate change mitigation and adaptation and to combating desertification							
	4.2.2. Develop the concept of low-carbon development	2016	SAEPF, NAS, MAM	1001,0	In the framework of the funds, provided for state bodies for the relevant year	Establishing of working group	A draft decree of the Government of the Kyrgyz Republic on approval of the concept of low-carbon development is prepared
	4.2.3. Implement measures for sustainable development of mountain forests and land resources in the face of climate change on the area of 30.0 thousand ha	2015-2020	SAEPF, MAM	339136,2	In the framework of the funds of SAEPF and MAM for the relevant year, grant funds of international donor organizations	Implementation of project	Measures for sustainable development of mountain forests and land resources in the face of climate change on the area of 30.0 thousand ha are approved by the decision of the state bodies
Total:				340181,4			
4.3. At the national level to support	4.3.1. Review the existing traditional knowledge and technologies	2016	Kyrgyzpatent, SAEPF, MAM, SALSGIA, LSA	58,9	In the framework of the funds of Kyrgyzpatent for the relevant year	Establishing of working group	The existing traditional knowledge and technologies are collected

	traditional knowledge, innovations and practices of local communities on the use of biodiversity and ecosystem services in the implementation of traditional home industries	4.3.2. Develop recommendations on application of the principles of the ecosystem approach with use of traditional knowledge of local communities	2018	SAEPF, NAS, MAM, ME, MEI, SALSGIA, LSGA, LSA	88,3	In the framework of the funds of SAEPF for the relevant year	Establishing of working group	Recommendations on application of the principles of the ecosystem approach with use of traditional knowledge of local communities are approved by the decision of the state bodies
	Total:				147,2			
Total on Strategic target 4:					340637,61			
Total on implementation of strategic targets and objectives:					1076687,8			

List of abbreviations:

MFA	-	Ministry of Foreign Affairs of the Kyrgyz Republic;
MF	-	Ministry of Finance of the Kyrgyz Republic;
MES	-	Ministry of Education and Science of the Kyrgyz Republic;
MAM	-	Ministry of Agriculture and Melioration of the Kyrgyz Republic;
ME	-	Ministry of Economy of the Kyrgyz Republic;
MEs	-	Ministry of Emergencies of the Kyrgyz Republic;
MEI	-	Ministry of Energy and Industry of the Kyrgyz Republic;
MCIT	-	Ministry of Culture, Information and Tourism of the Kyrgyz Republic;
MH	-	Ministry of Health of the Kyrgyz Republic;
MJ	-	Ministry of Justice of the Kyrgyz Republic;
SAEPF	-	State Agency on Environment Protection and forestry under the Government of the Kyrgyz Republic;
SAGMR	-	State Agency on Geology and Mineral Resources under the Government of the Kyrgyz Republic;
SALSGIA	-	State Agency on Local Self-Governance and Interethnic Affairs under the Government of the Kyrgyz Republic;
SRS	-	State Registration Service under the Government of the Kyrgyz Republic;
NSC	-	National Statistics Committee of the Kyrgyz Republic;
SAACHS	-	State Agency of Architecture, Construction and Housing Service under the Government of the Kyrgyz Republic;
SIETS	-	State Inspection on Environmental and Technical Safety under the Government of the Kyrgyz Republic;
SIVFSS	-	State Inspection on Veterinary and Fitosanitary Safety under the Government of the Kyrgyz Republic;
Kyrgyz-patent	-	State Intellectual Property and Innovation Service under the Government of the Kyrgyz Republic;
NAS	-	National Academy of Science of the Kyrgyz Republic;
SPNA	-	specially protected natural areas;
LSGA	-	Local Self-Governance Authorities;
LSA	-	Local state administrations;

- GEF - Global Environment Facility;
- CBD - Convention on Biological Diversity;
- CITES - Convention on International Trade in Endangered Species of Wild Fauna and Flora;
- Ramsar
Convention - Convention on the Wetlands of International Importance Especially as Wildlife Habitat;
- UNDP - United Nations Development Programme;
- UNEP - United Nations Environment Programme;
- FAO - United Nations Food and Agriculture Organization;
- WWF - World Wildlife Fund;
- KOICA - Korean International Cooperation Agency;
- IUCN - International Union for Conservation of Nature.