

In order to achieve the Millennium Development Goals, Kyrgyzstan seeks to develop new approaches to strategic planning and policy, taking into account the sustainable management of natural resources on a par with economic and social development. Fragile ecosystems of Kyrgyzstan particularly mountain ecosystems are prone to global environmental threats. In this respect, Kyrgyzstan takes several measures to develop effective cooperation in the field of environmental protection at the global and regional levels.

Currently, Kyrgyzstan is a member of thirteen UN environmental protection conventions and three protocols.

Participation and implementation of multilateral environmental agreements are a priority for the country to ensure environmental safety.

To fulfill obligations under international environmental conventions the Kyrgyz Republic is actively cooperating in the field of chemicals management with the United Nations Environment Program (UNEP).

With the support of UNEP the “National Action Plan for the Stockholm Convention on Persistent Organic Pollutants” was prepared which was approved and an inventory of persistent organic pollutants in the KR was carried out.

In addition, UNEP has developed the State program to phase out ozone-depleting substances in 2008-2010, which was approved by the Kyrgyz Government Decision № 374 of July 11, 2008.

A draft decree of the Government of the Kyrgyz Republic “On termination of the use of ozone-depleting substances” was prepared, which is being coordinated with the ministries and departments of the Kyrgyz Republic.

At present, negotiations are conducted with UNEP to develop a third National Report on Climate Change (Framework Convention on Climate Change) and to prepare a project proposal to increase the capacity of Kyrgyz Republic in the field of biological safety (Cartagena Protocol).

Since 2005, **the United Nations Development Program (UNDP)** implements environmental program which supports the State agency to develop strategic and legal documents, such as the National Strategy for Adaptation to Climate Change, Environmental Code, the draft Law “On Biological Safety,” etc.

A number of projects aimed at addressing national and global environmental problems are implemented:

- Increasing capacity to assess and monitor national forests and trees (FAO),
- Strengthening the policy and regulatory framework for problem solution of biodiversity in the fisheries sector safety (UNDP),
- Demonstrating Sustainable Mountain Pasture Management in terms of the Suusamyr Valley (UNDP),
- Capacity building to improve national funding for the overall management of the environment in Kyrgyzstan (UNDP),

Since 2005, it cooperates with **the Forest Department of FAO** (Ankara, Turkey), under which FAO supports the development of forest ecosystems of Kyrgyzstan.

Under the support of FAO a strategy and action plan for electronic information resources in the Kyrgyz Republic forestry sector was developed.

Currently, a FAO project “Development of the production of pistachios and walnuts” is implemented and within the implementation framework it is supposed to help to build out the forest zone of the standard pilot walnut orchard of 10 hectares, and plantations of pistachio trees in an area of 100 hectares.

Under the support of the Training and Research Institute of the United Nations (UNITAR) it was conducted a work on the definition of national capacities and priorities of implementing the Strategic Approach to International Chemicals Management (SAICM) and a National Chemical Profile, in order to fulfill the commitments, expressed in the Dubai Declaration and SAICM Global Plan of Action.

### **Climate change and the negotiation process**

Strengthening measures to prevent climate change is urgent and pressing task for Kyrgyzstan. During the preparatory processes for the 15th and 16th sessions of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in Copenhagen and Cancun Kyrgyzstan raised the question of the vulnerability of mountain ecosystems to global climate change and the need for urgent action.

Today, the progressive degradation ecosystems of the Kyrgyz Republic, which appears in the depletion of vital natural resources, primarily water, land, forest, a unique genetic background of flora and fauna is a real threat to sustainable human development.

One of the significant external threats to national security is the issue of global climate change.

The problem of climate change has evolved from the stage of discussion to real issues that have great influence on the livelihoods and economic development. This is a serious new challenge to humanity, including our country, dictating the need for urgent action to prevent a probable catastrophe, both in terms of natural conditions, and in terms of socio-economic activities.

As is known, Kyrgyzstan is a mountainous state; more than 94 percent of the territory is vulnerable, fragile mountain ecosystems. Over the past hundred years the average annual temperature in this country increased for 0.8 degrees, which is higher than average in the Earth. According to expected estimates of national experts the area of glaciers in Kyrgyzstan would be halved by 2050, and by 2100 they may disappear at all.

The Agenda for the 21<sup>st</sup> century identifies mountains as water towers of the world, and the mountain peaks covered with glaciers, are also called the third pole of the Earth.

Kyrgyzstan is concerned about the effects of global climate change on the mountain ecosystems: the intensive melting of glaciers resulting in the reduction of water resources, rapidly increasing incidence of landslides, mudslides, floods with numerous casualties and extensive damage to the economy of country, reduction of biodiversity, land degradation and other negative consequences caused by global climate change.

In the long term the change of the hydrological regime of mountain rivers in downward drainage will inevitably impact on ecosystems, located in the lower reaches, which is especially important for the Central Asian region with an arid climate and intense demographic growth. It is clear that all national programs and plans for adaptation and mitigation should be tailored to this alarming trend, and consistent among all the countries located in the basins of cross-border mountainous rivers.

According to the results of long-term forecasting it is expected the significantly reduction surface in runoff, changes in heat assistance, changes in crops, increasing the number of natural disasters, moreover these changes will affect people's health. Climate change will impact on biodiversity, the quality of land that will increase the number of degraded and desert lands, and in turn this will affect food production and quality. It needs the adaptation measures to mitigate the perception of such influence in priority areas at national level.

Under the support of the UNDP Environment Program the draft of **National Strategy on Adaptation to Climate Change and Plan for It** is started, added in the Action Plans of the country's development strategy until 2014, National Security Strategy. This plan calls for the development of adaptation measures in the following the most vulnerable sectors of the economy, as identified in the

Kyrgyz Republic Second National Communication on the UN Framework Convention on Climate Change: water resources, agriculture, emergency, population health, forestry and biodiversity.

Additionally, the World Health Organization jointly with the Ministry of Health, State Agency and other concerned agencies and departments of the Kyrgyz Republic completes work on a National Action Plan for Adaptation to the country's changing climate conditions of the health sector.

The Kyrgyz Republic has started drafting a Climate Profile project of the Kyrgyz Republic defining the strategic goal of the state policy on climate change, providing a safe and sustainable development framework of the Kyrgyz Republic, including the institutional, economic, environmental and social aspects of development in a changing climate and the emergence of the threats and challenges.

Within the framework of ongoing negotiations on the initiative of the UNFCCC, by the initiative of Kyrgyzstan together with representatives of Armenia and Tajikistan made a decision establishing a group of mountain countries that are landlocked, registered with the Secretariat of the UNFCCC, with assignment of coordinator functions on Kyrgyzstan.

Afghanistan declared about its decision to join the group at the session of the UNFCCC Working Group in April 2011 in Bangkok.

Group of those listed above mountainous regions is distinguished by its small size, the location at higher altitudes and do not have access to the sea, which imposes special difficulties in terms of development and sustenance of the peoples inhabiting there. Inaccessibility of mountain areas imposes its own limitations, and does much more costly investments in roads, power lines, industrial and social facilities infrastructure, health care, agriculture, etc. These circumstances contribute to the fact that the vast majority of this group of countries classified as the poorest, and in a changing climate as the most vulnerable.

The presence of this group will allow to lobby for and promote the interests of Kyrgyzstan is not as of a particular country, as well as an entire group of mountain countries have their own problems and problems related to climate. This, above all, issues construction of power plants, funding for the fight against natural disasters, adaptation, technology transfer, mountain forests, capacity building etc.

In the development of the initiative for a group of mountain landlocked countries, under the UNFCCC Kyrgyzstan also made a suggestions:

- a) on development and implementation of a special global program to mountain forests, their preservation, restoration and afforestation of mountain slopes;
- b) on lifting of restrictions on the construction of large hydroelectric power stations, as one of the clean development mechanism, or of national plans to mitigate climate change (NAMA);
- c) on establishing a special fund to support small mountainous countries to implement programs on adaptation, mitigation climate change, mountain forests and biodiversity, natural disasters, support of mountain communities.

In this regard, we note the need to support these initiatives of Kyrgyzstan on climate change during the 66th session of the United Nations General Assembly, because the General Assembly plays an important role in the issues relating to the global warming.

Currently, the focus on reducing of the greenhouse gas emissions is assumed to have a national plan of possible mitigation measures - NAMA (National Available Mitigation Activities) and the possible CDM Program projects.

The implementation of the above mentioned projects is possible under the condition of provided support from the developed countries, because it would help the country to address both environmental and economic problems.

The above picture gives a very brief, concise statement of the problems of mountain ecosystems of Kyrgyzstan related to the impact of climate change. These problems are typical for many mountainous countries. Obviously, that it requires considerable financial resources to address them, and therefore, we consider it appropriate to consider an issue on establishing a special fund to support the mountain countries to implement programs on adaptation, mitigation, mountain forests and biodiversity, natural disasters, support for mountain communities.

In addition, Kyrgyzstan, as a mountainous country, is interested in projects on environmental issues, **water resources, ecotourism, biodiversity conservation, radioactive waste and mining industries, as well as the study of glaciers of the republic.**

\* The glaciers of Kyrgyzstan – are one of the sources of supply of the most of the rivers in the region, providing them a steady runoff during summer. Due to the changing nature of water in the Aral Sea basin, global warming, desertification lowland regions are dramatically exacerbated the environmental problems of insufficient quality and quantity of water.

A preliminary forecast of the Second National Communication of the Framework Convention on Climate Change shows that the most probable combination of temperature and precipitation in 2100, the republic will have no glaciers.

Such a situation requires not only the development of the activities of effective water use and allocation, but also **implementation of special projects for the conservation of forests and afforestation, energy supply of mountain villages, the prevention of natural hazards**, research status and conditions of the formation of various sources of supply of water systems.

\* The degradation of mountain ecosystems is also a serious problem in Kyrgyzstan. The population of the mountain regions is characterized by demographic growth, poverty, lack of jobs, lack of energy, unsatisfactory infrastructure, poor economic integration into the overall state system are characteristic for residents of mountainous areas.

\* As is known, at the World Summit on Sustainable Development in Johannesburg, the European Union (EU) officially reported about the launch the Global Water Initiative “Water for life - health, welfare, economic development and security”. This initiative is endorsed by the Council of the European Union and has a political support from the European Commission and 15 member states of the European Union.

A political support for the initiative is supported by commitments to achieve key targets relating to water, in order to ensure that:

- By 2015 - halving the proportion of population without sustainable access to safe drinking water and adequate sanitation;
- By 2025 - the preparation of plans of integrated water resources management plans and water use efficiency in all countries.

It is necessary to note that the increased access to water and sanitation can make a significant contribution to alleviating poverty, improving health, improving the quality of life and the environment.

Under this initiative, Kyrgyzstan needs a help **to improve the water and sewerage infrastructure of the republic by providing investment and technical assistance.**

In order to achieve the Millennium Development Goals the State Agency identifies the following areas to solve problems in environmental protection and forestry:

### **1. Promoting Environmental Investment in Kyrgyzstan**

*Problems in waste management of the manufacture and consumption.*

The environmentally safety disposal of household solid wastes (HSW) are not generally resolved in country. The current waste management system is not effective; the existing landfill sites

do not meet environmental and health standards and requirements. Existing landfill sites of household solid wastes in cities of the republic exceeded the design life by several times and now they are sources of secondary pollution of air, soil, groundwater aquifers, drinking water sources.

Currently, there are no enterprises for recycling of household solid wastes in the country. Less than 1% of all generated wastes are used as a secondary raw material.

Bishkek landfill site, in force since 1973, was designed for 10 years and the project was supposed dumping of 3.3 million cubic meters of household solid wastes (HSW). To date, 24 million cubic meters of wastes are storage at the landfill site, which doesn't meet environmental requirements and sanitary standards.

The territory of Bishkek city landfill site is characterized by shallow groundwater - the source of drinking water. Infiltration of liquid waste into aquifers can lead to outbreaks of infectious diseases.

**Proposal:** *It is necessary to attract foreign investment to build a waste recycling plant in Bishkek.*

## **2. Solution to the problems of water pollution**

The main sources of water pollution are agricultural, industrial plants, municipal sewage systems, animal farms and household waste of the population. The Chu, Syr-Darya, Kara-Darya, Jergalan, Tup, and other Rivers are most susceptible to contamination in their middle and lower reaches of the basins. The content of harmful substances in municipal effluents into water objects is much higher than established norms. This situation contributes to the emergence and outbreaks of infectious diseases (typhoid, malaria, cholera, etc.).

Due to lack of funds, the centralized sewerage treatment plants in the republic have 56% of the total number of cities, villages and towns. Currently, only 30% of the available 350 wastewater treatment plants in the country meet sanitary requirements; 40% do not serve, while the efficiency of wastewater treatment does not meet regulatory requirements.

**Proposal:** *To resolve this issue it is necessary to attract foreign investment for reconstruction of treatment facilities of Osh and Jalal-Abad, Batken and other cities.*

## **3. Assistance to forest restoration and establishment of forest nurseries**

Forest Fund of the Republic makes 3675.64 hectares, including forest area - 1116.56 hectares, accounting for 5.61% of the entire territory of the republic.

In order to protect and reproduction of forest resources, the State Agency developed an Action Plan on Forest Policy in the Kyrgyz Republic for 2011 - 2015 years and sent to the General Office of the Kyrgyz Republic Government for consideration.

“Results of the National Forest Inventory of Kyrgyz Republic” was approved by Government Decision № 407 of July 26, 2011.

To increase the forest area, preservation and development of forest ecosystems the State Agency is constantly increasing planting of forest plantations, not only in the lands of the state forest fund, but also outside the state forest fund lands on municipal lands and lands of local governments.

To provide with planting materials and landscaping of settlements the new settlements nursery timber, fruit and ornamental trees and shrubs, laid the school department for growing large-sized seed.

**Proposal:** *For the cultivation of seedlings and saplings in order to ensure planting forestry and people it is necessary to create specialized nurseries of seedlings with closed root system, as well as the creation of seed warehouses with modern technical equipment in the forest fund territory of the Kyrgyz Republic.*

The health condition of unique relic walnut forests in Jalal-Abad area of Kyrgyz Republic is currently conditionally satisfactory. The main pests of forests are the gypsy moth, plum lecanium, archa seed weevil, etc. In this regard, the State Agency is constantly working to find funding for activities to combat forest pests in fruit and nut forests of Kyrgyzstan.

Technical assistance (on a grant basis) was obtained from the Turkish International Cooperation Agency (TICA) in the form of laboratory equipment, aerosol gas generators, insecticides, two new biological laboratories in the cities of Jalalabad and Uzgen cities. The received laboratory equipment meets international standards and provides a new biological method to combat the gypsy moth.

The implementation of KOISA project on sustainable development of forest ecosystems and environmental safety, protection, reproduction and rational use of forest resources is started. This project will build two laboratories to determine the quality of forest seeds, forest protection laboratory.

***Suggestion:** Further technical assistance from international donor organizations in solving problems related to forest pests in fruit and nut forests of Kyrgyzstan is necessary.*

#### **4. Assistance in solving the problems of biodiversity conservation**

Biodiversity conservation in Kyrgyzstan shows the positive impact of the accession countries to the Convention on Biodiversity, the entry into the international legal field. One of the priority developments of Kyrgyz Republic is to ensure environmental security as a basis for sustainable development of the country. To achieve these objectives, the measures aimed at harmonization of environmental legislation to implement obligations under the related environmental conventions are conducted. To date the following projects are implemented: UNDP / GEF project “Strengthening policy and regulatory framework for addressing biodiversity conservation in the fishing industry” and “Demonstrating Sustainable Mountain Pasture Management in Suusamyр” ADB “Central Asian Countries Initiative for Land Management” (CACILM), the National Framework Program on Sustainable Land Management till 2016, etc.

The Kyrgyz Republic carried out the following activities on conservation of biodiversity:

- The national legislation is improved. One of the important achievements in the field of environmental protection and natural resource management is the adoption of the Concept of the Kyrgyz Republic Ecological Safety (2007) and a set of measures for its implementation (2008);
- On 31.03.2011 the Kyrgyz Republic Parliament enacted new version of the Law “On specially protected natural territories”, which was signed by the Kyrgyz Republic President on 03.05.2011, № 18 and it came into force from 11.05.2011. The draft regulations are developed for the implementation of the Law;
- In November 2006, Kyrgyz Republic joined to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, being at stake Endangered Species (CITES);
- In 2007, the second edition of the Kyrgyz Republic Red Book was published;
- To maintain and reproduction of forest ecosystems the concept of sustainable development of the Kyrgyz Republic forestry till 2025, Kyrgyz Republic National Forest Program for 2005-2015 are implemented, works to develop a National Action Plan on Forest Ecosystems for the period till 2015 are conducted. In 2010 the National Forest Inventory of Kyrgyz Republic was completed, launched first in CIS countries;
- The KR Presidential decree introduced a moratorium on the felling, processing and sale of valuable tree species growing on the lands of the Kyrgyz Republic forest fund (2006);

- In 2008, Presidential decree introduced a moratorium on the harvesting of fish, fishing in the lakes Issyk-Kul, Son-Kul and other water bodies;
- The Secretariat of the Convention on Wetlands of international importance as Waterfowl Habitat (Ramsar Convention) included the Son-Kul Lake into the Ramsar List of World Wetlands of International Importance (Certificate № 1943 from January 21, 2011). The Son-Kul Lake - the third wetland, after Chatyr-Kul Lake (2005) and Issyk-Kul lake(1975), included to the named list;
- The areas of natural areas of preferential protection (NAPP) is increased, and today its total area of 1189.5 hectares, or 6.3% of land area. Compared with 2005, the area of protected areas increased by 998.7 hectares .So in 2009 the were organized Surmatash State Reserve which total area is 66.2 hectares, National Natural Park “Sarkent” - 40.0 thousand hectares, the State Botanical reserve of national importance Mountain “Aigul-Tash” - 253.9 hectares. The territory of Besharalsky reserve is expanded for 25.3 hectares and the Natural Park “Salkyn-Tor” for 20 hectares;
- The Institute of Biotechnology of the National Academy of Sciences established a genetic bank of endemic, rare and economically valuable plant species of the Kyrgyz Republic.

However, there are some worrying trends:

- There is a failure and violation of laws in the sphere of natural areas of preferential protection, protection and use of biological resources;
- There is no system for monitoring, recording, evaluation, prediction, control and management of biological resources;
- The state budget funds are not pawned at keeping the state inventory of flora and fauna and monitoring of biodiversity;
- There is no government programs and plans for the conservation and sustainable use of wild plant resources;
- A number of species threatened with extinction are increasing, poaching, illegal logging, forest destruction and near-village pasture ecosystems are become widespread;
- The aims and objectives of the Strategic Plan of the Convention on Biodiversity, the Global Strategy for Plant Conservation and the Program of Work on Protected Areas are not considered enough;

Problems of biodiversity conservation and protected areas in the country associated with low-budget financing, which determines the low material and technical, scientific and personnel potential of protected areas and the effectiveness of biodiversity conservation. Institutional aspects and management of protected areas are ineffective in the absence of a specialized unit in the environmental department of the republic.

***Suggestion:*** *The further financial and technical assistance from international donor organizations in order to fulfill obligations under the Convention on Biological Diversity and related environmental conventions, promoting environmental sustainability are necessary.*