

**BIODIVERSITY PLANNING SUPPORT PROGRAMME (BSP)**

**Integrating Biodiversity into the Tourism Sector:  
Best Practice and Country Case Studies**

**KAZAKHSTAN**

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# 1. OVERVIEW OF PRESENT STATE OF TOURISM DEVELOPMENT IN KAZAKHSTAN

## 1.0. Introduction

The Republic of Kazakhstan, formerly a part of the Soviet Union, (see map Figure 1) is a young State that only became independent in 1991.

Figure 1. Map of the Republic of Kazakhstan



The Republic of Kazakhstan is the ninth largest country in the world. It is a land-bound country which measures over 3000 km from the west to the east and 1600 km from the north to the south, with an area of 2.74 million sq km. To the east, north and north-west Kazakhstan borders with Russia (the extent of the border is 6477 kilometres). To the south it borders with the countries of Central Asia: Uzbekistan (2300 kilometres), Kyrgyzstan (980 kilometres) and Turkmenistan (380 kilometres), whilst to the south-east it borders with China (1460 kilometres). The total extent of Kazakhstan borders is nearly 12.2 thousand kilometres, including 600 kilometres along the Caspian Sea to the west.

### **1.1. Relative importance of tourism in the national economy and relative priority in national planning policy**

After almost ten years of chaotic development of tourism and lack of attention from the authorities, the government of Kazakhstan just recently started to pay attention to tourism development. The government finally realized that modern tourism is one of the most profitable and dynamically developing industries in the world economy. In 1999 international tourism constituted 8 percent of world export of goods, 37 percent of service exports, and placed third after export of oil and automobiles. World Tourism Organisation (WTO) experts note considerable interest in the Central Asian region including Kazakhstan as new tourist destinations. Thus Kazakhstan has a unique opportunity to occupy its own niche on the world tourist market.

In Kazakhstan tourism is considered officially to be one of the priority sectors of the economy and directly, and indirectly, influences key spheres of the economy, namely transport, communications, construction, agriculture, internal goods production, which makes it an important catalyst of social-economic development.

During 1999 the appropriate agencies of the Republic of Kazakhstan registered 106,739 foreigners who arrived in Kazakhstan on government business, private business and as tourists. During 1998, 98,729 visitors were registered. Based on the assumption that tourism from abroad can substantially solve employment problems and increase inflow of hard currency, Kazakhstan intends to concentrate on development of international tourism. According to the Statistical Agency of the Republic of Kazakhstan, in 1999 each foreign tourist brought an average of US \$700 into the state budget.

Taking into consideration the fact that international tourism is an important source of income for the state budget, Kazakhstan faces the challenge of increasing tourism from abroad and creating a favourable tourist image for the country. One of the fundamental factors for achieving these goals is the presence of two important conditions: (i) availability of tourist product, and (ii) travel safety.

In 1998-1999, there was a reduction in the number of incoming tourists compared with previous years, and as a result the state budget received less income. This trend was caused not only by increased competition, but also due to the perception that Kazakhstan is not a safe place for tourism. At the same time, existing tourism infrastructure reached a critical condition because of the dilapidated state of many hotels, restaurants and other tourist attractions, which were built 50-60 years ago.

Tourism development is also hindered by the following weaknesses and limitations:

- The existing Law on Tourism was adopted in 1992, and it does not correspond to the present-day economic situation in the country and does not provide a suitable legislative framework for tourism to develop;

- there is no state policy on tourism, and the National Conception of Tourism Development has not been elaborated;
- the country's tourism potential and its place on the world tourist market have not been investigated;
- the existing statistic base in tourism industry does not correspond to world practice;
- a tourism marketing strategy has not been developed;
- there is no scientific-methodical centre for research and projection of the tourist market, nor for the preparation and skills improvement of personnel for the tourism industry;
- visa procedures are complex, lengthy and expensive; and
- there are no conditions for development of domestic tourism and tourism from abroad.

The following management approaches are being planned to rectify the situation:

- Preparation and passing of laws on all types of tourism;
- certification and standardization of tourist products and services;
- development of tourism infrastructure;
- control and regulation of tourist flows;
- development and improvement of quality of transportation, hotel, restaurant and medical services for tourists;
- organization of reception and services by types of tourism; and
- identification and liquidation of problems threatening to life and health of tourists.

The present situation in the tourism market results in a huge loss of income by the state budget; from another side it brings deterioration to the tourist image of Kazakhstan. This has caused anxiety for the central executive authorities of the Republic of Kazakhstan, and the government has had to elaborate a project on the "Conception of safety in the sphere of tourism". This document outlines spheres of responsibilities of all stakeholders in guaranteeing safety of tourism services and, therefore, called upon facilitating the development of tourism. It is the first time that the principle of "no harm to the environment while on travelling" was formulated in this document.

The following are named as priorities in guaranteeing of safety in the sphere of tourism:

- Safety of tourists' lives and health;
- insurance;
- protection of customers' rights;
- fire safety;
- safety in places of accommodation and catering;
- safety of transportation;
- defence and protection of tourist's environment;
- information on safety issues;
- measures against organized crime and terrorism; and
- creation of local systems guaranteeing safety of visitors and local population.

## **1.2 Institutional structure of tourism government planning and policy**

Realisation of these complex actions is planned to be implemented by corresponding state and local authorities. It should be noted that the system of state management of tourism has changed

considerably in last 15 years. Since 1991, when Kazakhstan became independent, there have been at least six such changes. Presently, *The Tourism and Sport Agency* is the main organization responsible for the development of tourism in the Republic of Kazakhstan.

**Table. 1: Ministries and organizations responsible for realization of tourism activity**

Agency Title	Responsibilities
<i>Tourism and Sport Agency</i>	Overall coordination, execution and control of the development of tourism in Kazakhstan
<i>Ministry of Foreign Affairs</i>	Optimisation of visa procedures for tourists from countries which do not represent any threat to the state; lowering of consul fees and reduction of time for preparation of tourist visas
<i>Ministry of Internal Affairs</i>	Simplification of registration procedures for foreigners visiting Kazakhstan, and abolishment of the system of permissions for Kazakhstan citizens to exit the country
<i>Ministry of State Income</i>	Simplification of customs procedures for tourists
<i>Ministry of Finance</i>	Financing from the state budget for the functional program “Events in tourist activity”
<i>Ministry of Economy</i>	The attraction of technical assistance and privileged loans for realization of state programs of tourism development
<i>Investment Agency</i>	Attracting direct investments for the creation of tourism infrastructure for financially stable tourist organizations and firms
<i>Statistics Agency</i>	The improvement of statistics in tourism industry according to international practice
<i>Ministry of Transportation and Communications</i>	Complex servicing of foreign tourists in points of entry and exit, and also for the reduction of transportation charges for tourist groups on domestic and international routes
<i>Ministry of Natural Resources and Environment Protection</i>	Coordinating the development of tourist routes in national parks, and also to determine quotas and handing out permits for hunting and fishing
<i>Regional Authorities</i>	The elaboration of regional programmes of tourism development including actions on organization of social tourism for unprotected groups of population

### 1.3. Dominant types of tourism practiced

#### 1.3.1 History

Tourism in Kazakhstan has deep roots going back to Soviet times. At those times the main type of tourism was so called “social tourism”, when travel was subsidized from non-budgetary sources of financing and from money allocated by the state to meet social needs. By means of subsidised travels and excursions, Soviet citizens realized their “constitutional” rights on relaxation and freedom of relocation, on rehabilitation and strengthening of health, on favourable environment, on access to cultural establishments, natural and cultural heritage, on free access to information and on social protection.

The trade union organizations, which were responsible for providing recreation opportunities for the workers, also conceded great importance to the development of tourism. In the period of time from 1971-1975 Kazakh trade unions directed about USD 15 million towards the development of

tourism in Kazakhstan. The country infrastructure used by tourists (railway, aircraft, sea, river and etc.) covered the whole country. Different types of tourism activities encouraged more than three million people to travel annually 30 years ago. Tourist permits were obtained by trade union organisations at the expense of funds allocated to the state social insurance. The tourist organizations were completely exempted from taxes and received reduced rates for organizing travel..

Several forms of state-endorsed tourism relate directly to present day natural and cultural based tourism including:

- a. Children's tourism (e.g. outdoor camps)
- b. Amateur – Sport/Health tourism (e.g. hiking, mountaineering)
- c. Medical/Health tourism (e.g. spas and wilderness based sanatoriums)
- d. Cultural-cognitive tourism (e.g. visiting nationalist monuments and religious centers)

More detail on these, and other historical domestic tourism activities is provided in Annex 1.

In the past, foreigners could visit the USSR, usually with a cultural-cognitive purpose, with practically no emphasis on the natural attractions (flora, fauna, landscape, etc.). Foreign visitations were regulated in USSR so foreigners could visit only well-known cultural tourist centers.

### **1.3.2. Present day situation**

The tourism sector, both domestic and international, of modern Kazakhstan is based mainly on the utilization of nature. Unlike in Uzbekistan or in central and north western Russia, there is little opportunity for cultural tourism. Kazakhstan has very few outstanding monuments of material culture, mainly because the nomadic lifestyle of Kazakhs, the indigenous people of the country, precludes build-up of large towns and cities.

*Conventional tourism.* Following the above classification of tourism in Kazakhstan in Soviet times we can say, that domestic *medical-health tourism* is still rather well-developed, but the volume of this kind of service has dropped substantially since independence, mostly as a result of price increases relative to real incomes.

*Shopping tourism* was very popular in Kazakhstan in the 1990s, it helped to stabilize the consumer goods market in the country. Highest rates of visitation occurred from China, UAE, Turkey, Poland and Russia. Domestic shopping tourism is also well developed in Kazakhstan. It is often the only employment possibility for a large number of the country's population.

Unfortunately, *sportive tourism* is not as developed as it could be. We hope, that Kazakhstan's intention to bid for 2010 Winter Olympic Games in Almaty will boost the revival of sportive tourism.

*Beach tourism* also needs development, and because there are not many places in Kazakhstan appropriate for this type of tourism, it should not be too difficult to bring them to operating condition. One such place, Lake Balkhash, is located along the road between the old and new capitals of the country. Another one, Lake Alakol, is located on one of the busy transit ways through Central Asia connecting China with other countries. However, the majority of Almaty's population, which is more than 1 million, prefer tourism in Kyrgyzstan, spending the summer vacations on Lake Issyk-Kul.

*Nature-based tourism.* This is the most popular type of tourism in Kazakhstan. It is a basis for both domestic and international tourism. Being the most affordable, it allows the greater part of the country's population to satisfy its need for active recreation. A relatively intact and diverse landscapes, unique flora and fauna including game birds and animals makes Kazakhstan attractive to foreign tourists.

For many decades Kazakhstan citizens have defined "recreation" as spending weekends and vacations in nature. For many, it is short hike (cross country skiing in winter) and picnics in the most picturesque places nearby their living places. Mountain tourism and mountaineering of different categories of difficulty are still popular. These types of active recreation in the mountains are beginning to attract more and more foreigners who climb the Tien-Shan Mountains. In recent years bicycle tourism has become popular, including mountain-biking.

Water tourism is relatively popular, but it is not very well developed. Mainly it represents trips on boats and rafts on middle-mountain and plain rivers in eastern, southeastern and southern Kazakhstan. White water rafting on mountainous rivers has great potential for future development.

Nowadays, like in Soviet times, various types of hunting and fishing are extremely popular. However, hunting and fishing have different meanings for Kazakhstan citizens and foreigners. For local population it is a possibility to diversify their food supply, sometimes even the only source of food. For foreigners, this is an interesting way to spend their leisure time. Hunting by Arab princes and sheikhs, using rare falcons and houbara bustards, which are listed in the Red Book of Kazakhstan, is used as a political tool to attract investment for the development of the country. So-called "international tourists hunting" or "intourhunting" of game animals brings income to the budgets of national parks and allows them to implement environment protection. Fishing on sturgeons and common catfish, when the caught fish is released back to the water, also brings in revenue that can be allocated for protection of fish stocks.

Horse riding in mountains is popular among foreigners. Many foreigners also like bird watching and taking pictures and drawing wild plants.

*Cultural-cognitive tourism* as noted above, is not developed in spite of the fact that Kazakhstan is a land with an ancient civilisation. From remote times, its inhabitants, the ancestors of the present-day Kazakhs, engaged in cattle breeding and farming, and created a distinctive culture. Some outstanding monuments of their cultural life have survived in the form of burial mounds, sites of ancient settlements, fortifications, mausoleums, and even whole towns like Otrar. The finest monuments of the pre-Mongol period include the ruins of Otrar and the mausoleums of

Aisha-Bibi and Babaj-hatun near Taraz city. In spite of great damage inflicted on urban life by invasion of the Mongols, the cultural life of Central Asia and Kazakhstan did not disappear. The centralised states of the 13<sup>th</sup> and 14<sup>th</sup> centuries provided the prerequisites for flowering of architecture and the applied arts. Striking examples are the mausoleum of Ayak-Hamir, Jochi-khan, Sirli-tam, Ko-Kesene and others. Unique among them is the mausoleum complex of Hodja Ahmed Yasevi that was erected at the end of the 14<sup>th</sup> century in the town of Turkestan. The majority of archaeological and historical monuments, with the exceptions of the mausoleum of Khodzha Akhmed Yasevi and Sophiya Orthodox cathedral in Almaty, are not adequately prepared for tourist visits or are located far away from big cities and good roads. There are few unique exhibits and collections of art, which have great historical and artistic value.

Great attention should be paid to study of the tourist potential of original culture of Kazakh people, as well as other native and nomadic people presently living in Kazakhstan. The traditional Kazakh house, or *yurt*, has the round shape of a portable house. It consists of a wood hull, which is covered by felt, the earthen floor is coated by *kiiiz*, a large felt mat having good heat-insulating properties, and the walls inside are decorated with carpets. Tourists can visit such yurts, to experience Kazakh culture and hospitality.

#### **1.4. Participation and degree of interaction of different sectors and stakeholders in the tourism process: public, private, NGOs, local communities, universities, etc.**

The level of cooperation between various sectors and interested groups of the population interested in tourism in Kazakhstan can be characterized as low but having a tendency towards complication and optimisation. The development of tourism as an independent sector of the economy in Kazakhstan goes in accordance with the principle of primary accumulation of capital. It is accompanied by the capture of markets and tough competition between organizations and companies providing tourist services. The situation is unique in that the competition exists not between the companies and firms providing tourist services, but between the organizations which are supposed to guarantee quality and safety of these services. This can be seen in the customs and immigration offices and related divisions of the Ministry of Internal Affairs responsible for issuing exit permits to Kazakhstan citizens and registration of foreigners coming to the country. These agencies virtually parasitize the providers of tourist services, and their activity is characterized by extreme level of corruption.

In the beginning of 1990s during the period of developing the tourist market and its narrow specialization in organized shopping tours, the “main players on the field” were numerous small tourist firms, customs, departments of the Ministry of Internal Affairs and transportation agencies that transported cargo and passengers abroad. This led to a fast saturation of the consumer goods market in the country. In the period of active development of shopping tourism an infrastructure of accompanying services, such as organization of places for wholesale and retail trade, expansion and improvement of public catering system, organization of small and medium cargo transportation inside the country, accommodation etc. started to develop. When the market of consumer goods had saturated, the level of shopping tourism declined, but tourist companies, which earned money on organization of shop-tours got stronger and they started offering other services. First was organization of recreation, medical treatment and education abroad.



Introduction of new services brought to life a new advertising business activity and, therefore, an improvement of quality of printing products and electronic mass media communication.

The development of economic activity in Kazakhstan associated with the attraction of foreign investments and overseas consultants increased the number of foreigners visiting the country. Foreign citizens organizing their leisure time to learn about Kazakhstan, coupled with a desire of residents to know the country of residence better caused development of tourism in Kazakhstan. The growth of domestic tourism was promoted by slow growth of real income for the majority of the population of the country, restricting foreign travel, and therefore increasing the tendency to satisfy recreational needs with the natural tourist resources of the country. This led to expansion of the supply of tourist services and accommodation facilities in places of recreation. The interest in the culture of Kazakhs by foreign tourists produced a slow but growing revival of handicrafts, with service and handicraft industries for tourism becoming sources of income for local populations. The needs of the domestic tourist market have become the focus in the development of tourism, and the level of cooperation between interested parties will depend on how fast real market relations are established and whether corruption can be defeated in Kazakhstan.

### **1.5. Education and training of tourism**

A system of preparation of tourism specialists has not existed in Kazakhstan, either in Soviet times or in modern days. People working in this industry came from other professions, such as art historians, philologists and foreign languages specialists, or athletes, biologists etc. Managers and middle level specialists improved their qualifications in various aspects of tourist activity either in large cultural centres of the former USSR (Moscow, St-Petersburg, Kiev) or invited special trainers from those centres to their region. The most prestigious were the courses for accommodation and servicing of foreign tourists. However, even in modern Kazakhstan a system of tourist education has not been yet developed. Although it is possible to get training in the country's universities to become a guide-interpreter, a tourism manager, an ecological tourism manager, etc., these tourism courses (as well as related ecological education courses) are not integrated and were developed independently.

After the breakdown of the Soviet Union, the possibility for improving qualifications in theoretical aspects of organization of tourism activity almost disappeared. Development of specialists in this sphere happened almost entirely during practical activity, and there is a lack of literature on organization and implementation of tourism activities

To remove these shortcomings in education and improvement of qualification in the sphere of tourism, the government of Kazakhstan is planning to establish during 2001 an "Information Methodical Centre" at the Tourism and Sports Agency and to arrange a seminar on "International standards of tourist education" under the umbrella of the World Tourist Organization (WTO).

### **1.6. Compliance with existing international guidelines on best practice for sustainable tourism**

The main tourism executive agency of the Republic of Kazakhstan often relies in its official documents on reports and recommendations of the WTO. Conceptions and strategies on various

aspects of tourism development in the country follow the provisions of the Charter of Tourism, Code of Tourism, and the final documents of the Hague Parliament Conference on Tourism. However, it is difficult to judge how consistently these principles and recommendations are being implemented in practice.

In the sphere of ecotourism, following the provisions of the 1992 Caracas Declaration (which emerged from the IVth IUCN World Parks Congress) can be considered conditional because of the fact that, first, the text of this document is not well known, even to the relevant authorities, and, second, uncertainty and low political status of the national ecological policy doesn't help the introduction of relevant international documentation

### **1.7. Brief description of main ecotourism attractions of Kazakhstan**

Kazakhstan contains many possibilities for ecotourism development, due to its size and extreme diversity of landscapes. But, as in a majority of other countries, the potential sites for ecotourism development are located within natural territories with increased protection, or areas which have experienced little human visitation because of their inaccessibility.

From a practical point of view, natural territories with the highest potential for ecotourism development are located near Almaty, the former capital of Kazakhstan. There is an international airport and a large railway station in this city. Foreign embassies and consulates also are located there, as are representative offices of international and trans-national companies and corporations. A sufficient amount of large and small hotels, restaurants and entertainment create possibilities for accommodating leisure tourists.

A belt of sand deserts begins within a one hour drive to the north from Almaty; whilst in a southern direction there are diverse mountain landscapes. In the south, the city borders with Ile-Alatausky National Park, whilst 20 km from eastern border of the city there is Almaty Reserve. Each of the numerous mountain gorges within 200 km of the city represents separate locations for the development of ecotourism. Included in this 200 km zone is the Altyn-Emel National Park, located northeast of the city, and the proposed Charyn National Park in the south.

Areas with good potential for ecotourism development are briefly described below.

*Ile-Alatauskiy National Park* was created in 1996 and has an area of 160 thousand hectares. Diverse foothill and mountain ecosystems are represented in the park, including deciduous (among them unique apple and apricot landraces) and fir-tree forests, sub-alpine and alpine meadows. There are many wild animals living in the park, including snow leopard and brown bear, and birds. Also glaciers, unique lakes, rivers and waterfalls are located here. Among objects cultural heritage there are sites of ancient settlements, the biggest of them is the so-called Talgar settlement dated to early middle ages.

There are tourist bases and two functioning mountain sport complexes are located on the territory of the park. Numerous mountains peaks with altitudes from 3500 to 5000 m allow ascents at any time of the year. The northern slopes of "Molodezhnyi" glacier are used for downhill skiing exercises at summer time.

*Almaty Reserve* was created in 1966 and has an area of 73 thousand hectares. Ecosystems, plant complexes, animals, birds etc. present in the Ile-Alatauskiy National Park are concentrated here as well, but here they are protected better. The strict protection regime allows limited development of ecotourism in the reserve.

*Altyn-Emel National Park* was created in 1996 and has an area of more than 500 thousand hectares. Desert and semi-desert, middle-mountain and mountain, river and wetlands ecosystems are represented in the territory of the park. Two kinds of antelopes, wild jackass - *kulan*, mountain ram - *arkhar* and mountain goat - *tau-teke* live here. The latter is a hunting object for foreign tourists. The revenue from hunting allows the park to survive when there is no state budget financing.

There are two absolutely unique geological objects in the park. The so-called "Singing barkhan" or "Ak-kum tau" is a huge dune with 160 m altitude and 3 km long. Its sand makes a sound of a jet while moving, whilst there are few words to describe their stern beauty Of the clay mountains known as Aktau.

Cultural historical heritage is represented by a complex of burial mounds (Bes-Shatyr) belonging to the sak's culture (beginning of the first millennium), and by petroglyphs from the Bronze Ages from Kyzyl-azh Gorge. Close to the territory of the park is located a memorial complex to a genius of Kazakh people, Chingiz Ualikhanov, ethnographer, artist, researcher of Central Asia, who lived in the middle of 19th century and who made numerous discoveries during 30 years of his life. Development of ecotourism on the territory of the park has very good potential despite an absence of infrastructure.

## **2. OVERVIEW OF PRESENT STATE OF BIODIVERSITY CONSERVATION AND PLANNING**

### **2.1. Present state of biodiversity conservation in Kazakhstan**

#### **2.1.1. Main ecosystems**

The ecology of Kazakhstan is dominated by a continental climate with insufficient and unsteady moisture. Because of the latitudinal change of climate there is a progressive shift of ecological systems from semi-arid forest-steppes in the north of Kazakhstan through cold continental semi-deserts and deserts to moderate warm continental ones in the south of Kazakhstan.

Kazakhstan is distinguished by its great variety of mountainous ecological systems, especially in Western Tien-Shan (Karatau and Western Tien-Shan), Northern Tien-Shan, Dzungar and the Altay Mountains). These mountainous systems affect the ecology of adjacent foothill plains owing to the so-called "rain shadow", producing the foothill deserts in the South of Kazakhstan.

**Table. 2: Main Ecosystems of Kazakhstan**  
*Source: NBSAP, 1999*

Name of ecosystem	Area
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	Million ha	% of total area of Kazakhstan
Forest	11.5	4.2
Forest-steppe	3.6	1.3
Steppe	76.2	27.8
Desertified steppe	22	8
Desert	120.6	44
Mountains and foothills	32.9	12
River valleys and lakeshore	7.4	2.7

Source: NBSAP, 1999

A brief description of these ecosystems is provided in Annex 2.

Annexes 3-5 provide brief descriptions of the wild flora, fauna and fossils of Kazakhstan.

## 2.2. Relative priority in national planning policy

Since 1991, when the Republic of Kazakhstan declared its state independence, the social and political life in the country has been undergoing great changes. The Republic faced social, political and economic problems, so it started to determine the development priorities. Alongside reforms and measures on stabilization of social and economic life, the Republic pursued the course of a sensible approach to the problems related with environmental protection. The UN Conference on Environment and Development (Rio de Janeiro, 1992) has promoted this policy to a great extent because Kazakhstan signed the Framework Convention on Climate Change and the Convention on Biological Diversity (ratified on 6<sup>th</sup> September 1994), thus making it an equal member of the world environmental protection process.

For a long time the rich natural resources of the Republic of Kazakhstan have been a major factor of the economy. The result of this policy is that the most prominent economic sectors in Kazakhstan today are the mining industry, extensive cattle ranching and agriculture. These were developed without regard to environmental protection measures or environmental recreation possibilities. Military bases, the Baikonur Space testing area and weapons testing sites (including nuclear weapons), occupied vast territories. All this has led to the degradation of natural ecosystems, accumulation of industrial waste, and pollution of nature with heavy metals, pesticides, radioactive materials, rocket fuel and other toxins.

The most glaring example of the degradation of environment resulting from human activity is a partial disappearance of the Aral Sea. The Aral disaster not only destroyed whole ecosystems, plant communities, etc., but put to the brink of collapse the human population of several districts of Kzyl-Orda region including the area where the Baikonur Space testing site is located.

A lot has been written about the tragedy of this region. Pictures of ships in sand waves have been seen everywhere in the world. International financial institutions (the World Bank) and intergovernmental organizations (e.g. UNDP) have invested huge resources into solving of the problem of Aral region. However no visible results have been reached. . Possibly, development

of tourism can have an impact the on the social-economical situation in this region of ecological disaster. The Space testing area Baikonur could be one of the objects for tourist visits. However, because Baikonur is rented by the Russian Federation, it is under the jurisdiction of the Russian State, and therefore a tourist programme would require additional approval from Russian military officials.

At the present time mineral resources and hydrocarbons continue to dominate the country's exports. However, a model is required for the sustainable utilization of the natural resources that currently cause great damage to the environment. The concept of a sustainable development, under which the contradiction between social and economic growth, natural resources use and conservation of ecological integrity is eliminated, is an alternative to the historical model. This is in accordance with the principles of the UN Declaration on Environment and Development (1992).

The political changes, which took place in Kazakhstan and the economic hardships of the transition from the command administrative system to a market economy, have strongly affected the social sphere. Our country has adopted a model of reforms, which envisage macroeconomic stabilization given the social restrictions, but requires the identification of the final objectives of the transition period with minimal social loss. The difficulty in solving such a problem is due to the difficult economic situation for all sectors of the economy.

*Legal system.* The law "On Environment Protection" was adopted on July 15, 1997. The law determined the legal, economic and social framework for environmental protection for the benefit of the present and future generations; it is intended to prevent negative technological impact on the environment, to preserve environmental balance and organize rational use of natural resources in the country.

**Fig. 6: The main laws with effect on environmental protection**

<b>Name of law</b>	<b>Date of adoption</b>
Water Code	March 31, 1993
Forest Code	January 23, 1993
On Protection, Reproduction and Use of Animals	October 21, 1993
On Environmental Expertise	March 18, 1997
On Protected Natural Territories	July 15, 1997
On Environment Protection	July 15, 1997

Drafts of other laws on environment preservation are currently in the process of elaboration.

*Environment Policy development:* In April 1996 the Conception of Environmental Safety of Kazakhstan formulated by the Security Council was approved by Presidential Decree. The Conception includes basic principles, strategic objectives and priorities of environmental security as the basis for the sustainable development of Kazakhstan and the formulation of the National Environmental Action Plan (NEAP).

**Fig.7: Environmental protection relative government documents**

Name of document	Date of development
National Environmental Action Plan for Sustainable Development (NEAP/SD)	1998
National Action Plan to Combat Desertification in the Republic of Kazakhstan	1997
Initial National Communication of the Republic of Kazakhstan under the United Nations Framework Convention on Climate Change	1998
National Strategy and Action Plan on Conservation and Sustainable Use of Biological Diversity	1999

In October 1997, “Kazakhstan’s Development Long-term Strategy up to year 2030” (so called Strategy 2030) was declared. In turn, the section focused on environmental protection complemented the Strategy 2030. It is called the “Environment and Natural Resources” strategy and has four main priorities.

The first priority of this strategy is *the creation of an ecologically safe environment*. Among the tasks put forward for achieving this priority are the following:

- Stable improvement of the environment for it to become favourable to live in and for the health of people;
- Restoration of disturbed natural ecological systems;
- Creation of a system of adequate stable financing of nature protection programs by all of the natural resources users and social funds including international ones.

Achievement of the *sustainable use of natural resources* is determined as the second priority. In order to achieve this goal the following should be realised:

- Control for status of environment and monitoring of it, control for nature managers;
- Sustainable use, reproduction and protection of natural resources;
- Transition to resource-saving technologies.

The third priority is *Conservation of Biological Diversity of Flora and Fauna* that should be provided by:

- Monitoring, rational use, reproduction and protection of flora and fauna;
- Development of the network of specially protected territories.

The fourth priority - *Ecological Education* has received special attention and calls for fulfilling the following tasks:

- Public awareness and education of society in the field of environmental protection and rational use of natural resources, and
- Social cultivation of consciousness in regards to the priority of environmental protection problems.

### **2.3. Institutional structure of biodiversity government planning and policy**

### 2.3.1. Central governmental executive body

The central executive body of the Republic of Kazakhstan in the field of environmental protection is the Ministry of Natural Resources and Environment Protection of the Republic of Kazakhstan. In the activity of the Ministry there are formally distinguished four priorities: creation of ecologically safe environment; sustainable usage of natural resources; conservation of fauna and flora; and ecological education (see above). It is possible to assume, that the Ministry bears responsibility for development of national policy in the field of biodiversity protection and sustainable use, but unfortunately, the concept "Biological Diversity" is outside of the programme documents of the Ministry. At the same time, in accordance with a Resolution Number 918 of the Government of the Republic of Kazakhstan dated August 19, 1994 "On Approval of the Convention on Biological Diversity by the Republic Kazakhstan and Ensuring the Discharge of the Stipulated Obligations" the Ministry of Natural Resources and Environment Protection is entrusted with the functions of co-ordination and control for implementation of obligations by the Republic Kazakhstan, stipulated by the Convention on Biological Diversity. Considering, that "fauna", "flora", "forests" etc. constitute a biodiversity of the country, these concepts will be replaced with the concept "biodiversity" in the further statement.

The central executive body of the Republic of Kazakhstan in the field of environment protection has undergone significant changes during the last several years. Since 1991, when Kazakhstan founded state independence, such changes occurred at least seven times. The process of reorganization of the Ministry of Natural Resources and Environment Protection has coincided with implementation of the project on institutional strengthening of the Ministry within the framework of a technical assistance loan from the World Bank to the Government of the Republic of Kazakhstan. This one million US dollars study was completed but its recommendations were never executed. Moreover, contrary to the recommendations of the World Bank the number of the employees of the Ministry was reduced each year and has reached a low level.

Besides the Ministry of Natural Resources and Environmental Protection, including the Committee of Water Resources and Forestry, Fishing and Hunting Committee with their territorial or local departments, should also be involved in the process of conservation and sustainable use of biological diversity and work with the following

- Ministry of Education and Science;
- Ministry of Agriculture and its Committee of Veterinary Science and Committee on Land Resources Management.

After ratification of the Convention on Biological Diversity by our country the Ministry of Natural Resources and Environment Protection has formed a Joint Committee created for ensuring execution of the Convention statutes by the Republic of Kazakhstan. Heads and experts of government and non-governmental agencies involved in environmental protection entered this Committee.

For prevention and minimization of unfavourable impact on biological diversity a procedure of environmental assessment of the projects capable to cause such impact has been developed and

introduced. A system of benefits and material incentives for legal entities and individuals conducting eco-friendly economic activity in the regions adjoining to protected territories and objects has been developed, as well as ensuring the safety of plant and animal genetic funds in the collections and protected territories.

The *National Programme on Sustainable Development and Rational Use of Biological Diversity* has been developed in cooperation with the Ministry Education and Science. This programme embraces monitoring of the components of biological diversity within the structure of global ecological nature-resource environmental monitoring. This Programme was called for intensifying the fundamental and applied scientific studies of biological diversity of Kazakhstan. Under cooperation of these agencies, with the participation of the Ministry of Foreign Affairs, the *Programme of International Science-Technical Cooperation in the Field of Conservation and Sustainable Use of Biological Diversity* has also been developed. Here, the main emphasis has been on renewal and reinforcement of joint research works with states contiguous to Kazakhstan.

The Ministry of Agriculture, together with the Ministry of Education and Science and Kazakhstan Customs Service, have proceeded to the development and realization of measures on preventing introduction of alien invasive species Kazakhstan. These species can potentially enter and cause damage to aquatic and land ecological systems. At present, the Ministry of Agriculture and the Ministry of Education and Science are developing a set of measures for conservation of genetic resources and reconstruction of indigenous species of domestic animals and relict species of agricultural plants, as well as developing the scientific basis of rational use of biological resources, of agriculture ecosystems by rural commodity producers and ensuring the overall safety of biological diversity.

Regrettably, state financing cannot support all of these planned programmes and actions.

The management of natural resources and the protection of environmental assets have not been sufficiently finalised and are still undergoing restructuring. Overlap between the functions of different institutions has not yet been overcome. There is no system for ecological monitoring and no centre for the analysis and processing of data on the current state of biological resources. Such a research centre could provide up to date information for the decision-making and management institutions. The currently available funds for environmental protection are insufficient and are being used inefficiently.

Overall, the status and capacity of the bodies of biodiversity management and control in the Republic of Kazakhstan is unsatisfactory and restrictions on state financing will not allow rapid change in this situation. Thus biodiversity in Kazakhstan is likely to continue to decline, unless there is significant foreign investment in capacity building at the level of employees, inspectors of nature protection and those people involved in ecotourism activity.

### **2.3.2. Scientific and research institutes.**

The rich scientific potential of the Republic of Kazakhstan, the widely developed network of research organizations and high level of research on the components of biological diversity in Soviet times should provide a good base as for the analysis of state of biological diversity in the



country, as well as for the work on planning the process of conservation and sustainable use of biological diversity in future.

The scientific community includes scientists working at research institutes of the Ministry of Education and Science and those working at applied-research institutes including:

- The Institute of Botany and Phytointroduction;
- The Institute of Zoology and Animals Genetic Fund;
- The Institute of Soil Science;
- The Institute of Physiology, Genetic and Bioengineering of Plants
- The Institute of Microbiology,
- The Institute of Geography;
- The Centre of Biotechnology and Animals Reproduction;
- The Institute of Space Research;
- The Institute of Husbandry;
- The Institute of Plants Protection;
- The Institute of Forestry Planning;
- The Institute of Fishing Planning;
- The Institute Fodder-Production and Meadow-Pasture Facilities;
- The Institute of Fruit Growing and Viticulture;
- The Institute of Vegetable-and Potato Growing; and
- The Anti-Plague Institute.

There are the researchers working at higher education institutes (Kazakh, Almaty, West-Kazakhstan, Karaganda and others universities) involved in biodiversity planning and research.

At the same time it is necessary to recognise, that the situation with science in Kazakhstan is becoming worse and worse every day. Last year the Academy of Sciences was abolished, and the scientific institutes have received the status of state enterprises! The budget financing of Kazakh science is reduced each year. This under funding is leading to nepotism, favouritism and corruption between funding and implementing agencies.

The lack of capital has limited development of those branches of science not serving the interests of the mineral resources industry or not providing support to the millinery. It is undermining the study of natural sciences such as zoology and botany which have a direct relationship to research, conservation and sustainable use of biodiversity in Kazakhstan. It has resulted in closing-down of work on monitoring of endemic, rare and endangered species and systematic research of other species.

The scientists of most of the institutes mentioned above took part in the development of the National Biodiversity Strategy and Action Plan (NBSAP), described in Annex 6.

#### **2.4. Perceived degree of participation of the country in the Convention on Biological Diversity (CBD), and perceived benefits of being a part of CBD.**

Kazakhstan became party to the Convention on Biological Diversity in 1994. From the first meeting of the Conference of Parties in 1994, Kazakhstan has played more than just an observer role in the development of the Convention. At the 1994 meeting, and then in Jakarta, Kazakhstan

was elected as a member of SBSTTA. At the COP meeting in Buenos-Aires in 1996, Kazakhstan became a member of the COP Bureau. The country had the honour to be a host country for the Central and Eastern Europe Regional meeting to preparing for the forth meeting Conference of Parties in Bratislava in 1998. As far back as 1999, a representative of Kazakhstan took active participation in preparation of the Pan-European Biodiversity Conference held in March 2000 in Riga. However, from 1998, official structures of Kazakhstan have lost interest in participation in CBD activities. During the period of active cooperation with the Convention process, Kazakhstan gained access to financing for several projects; these are listed in the Appendix.

## **2.5. Overview of the role of NGOs and local communities in biodiversity conservation: main activities, constraints, and achievements.**

### **2.5.1. Role of NGOs**

The founding of state independence of the Republic of Kazakhstan initiated formation of a new sector of civil society in the form of ecological NGOs. This has occurred independently but coincidentally with development of national policy in the field of environment protection and met with some initial resistance because of:

- a historical absence of a real third sector in the country before independence and, as a consequence, an inability and unwillingness of state bodies to recognise the potential role of NGOs in environmental policy development;
- a deep-seated mistrust of NGOs by state bodies, as the successors of the old centralised-control system;
- a perception that the emergence of the third sector was strongly influenced by western organizations and funds, with an agenda to assist the development of democratic institutes in the former Soviet countries.

Strengthening of democratic processes, expansion of social partnership and intensive information exchange has resulted in expansion of a network and strengthening of professional opportunities of NGOs. The same processes, and also re-structuring of bodies of state management and sharp reduction of staff numbers, have created the preconditions for adjustment of partner's and business relations between non-governmental and governmental organizations.

However until now, involvement of NGOs in implementation of nature protection policy in Kazakhstan remains weak. They do not have sufficient access to the appropriate information in spite of Kazakhstan's ratification of the Aarhus Convention on Access to Ecological Information in 2000. Non-governmental organizations are only rarely involved in development and acceptance of political decisions in the field of protection of the environment, or in practical implementation of state nature protection policy. On the other hand, the NGOs do organize and carry out educational work with local populations, develop material for ecological education, carry out nature protection actions and measures, thus creating favourable ground for the raising of awareness of state nature protection policy in the general population.

Financing of ecological public organizations is via foreign funds. Thus, ranking of priorities for funding does not always coincide with national interests for nature protection activity. Non governmental organizations are not in a good position to apply for state nature protection funds, as they have weak knowledge of such opportunities and are insufficiently informed on priorities of activity of funds for the protection of nature. Information on expenditure on the state nature protection is not publicly available, and the public does not control the expenditure of these financial resources.

The increase in democracy in Kazakhstan has induced the Ministry of Natural Resources and Environment Protection to enter into dialogue with representatives of ecological NGOs of Kazakhstan. But "the sincere desire of the ministry to cooperate with NGOs" is dictated more by an intention to take control of the public ecological movement, and gain access to the finances provided by foreign organizations to support development of the Third Sector (i.e. NGO) in Kazakhstan. Historically, the national economy of Kazakhshtan has been based on extraction and mining of natural resources, an economic activity that does great damage to nature. Historically, the Ministry of Natural Resources and Environment Protection has not completed adequate assessment of negative impact on the environment and there has been little public consultation. The public has no opportunity to participate in a procedure of the state ecological expertise, and the public ecological expertise is not obligatory in Kazakhstan. In the new democratic situation, government institutions prefer to have a tame or "malleable" public represented to western democratic institutes as "the third sector". Foreign investors financing extraction and transportation of oil and gas in region of the Caspian Sea prefer this as well, and this may explain the absence of a public ecological movement in Kazakhstan, especially in the western part of the country where these extractive industries are most active.

Generalizing this brief analytic review of the current state of ecological NGOs in Kazakhstan it is clear that more attention must be paid on the part of western countries to development of civil society in Kazakhstan.

Although examples of participation of NGOs in preservation of biodiversity are becoming more common, their activity is directed at environment protection in general and they pay little attention to practical aspects of biological diversity conservation. NGO activity is limited mainly to preparation of projects or substantiation of the development of networks of specially protected natural territories or endangered species protection. Some NGOs are engaged in development of ecological education and awareness programmes that increase the general population's belief in the importance of nature protection, including the biological diversity preservation. This particular role of non-governmental organizations is very important because they carry out their activity in different regions of the country and thus influence the views of local communities "on the ground". Examples of such organizations are "Ecocenter" and "Ecomuseum" in Karaganda, "Naurzum" in the Naurzum zapovednik in Kostanai oblast, "Wild Life" in South-Kazakhstan oblast, and "Belovodie" in Ust'-Kamenogorsk. NGOs registered in the city of Almaty and working actively include: Kazakhstan-Central Asia Zoological Society, Green Salvation, Tethys Society, Public Centre Biodiversity Conservation in Kazakhstan, Koryk, Tabigat, ENVIRC, National Ecological Society, KAZDIN and others.

Since June 1997 the Programme of Small Grants of the Global Environment Facility (GEF) has

been functioning, the priority of which is the support of activities of ecological NGOs oriented for conservation of biological diversity. The main principles of this program are the involvement of local populations in biological diversity activities, strengthening of partner relations between the local authorities and public organisations. Non-government organisations aid the Government in the raising of ecological consciousness and providing information to different groups of population. They hold training seminars and participate in the collection and distribution of ecological information, and popularise knowledge of biological diversity conservation.

Despite the increase in the number of highly qualified ecologists and public ecological associations, they are still under-used inside the country and are isolated the international ecological movement.

## **KAZAKHSTAN part 2**

### **BIODIVERSITY PLANNING SUPPORT PROGRAMME (BPSP)**

#### **Integrating Biodiversity into the Tourism Sector: Best Practice and Country Case Studies**

##### **2.5.2. Role of traditional knowledge of local communities in biodiversity conservation**

Living in close interaction with nature, the Kazakhs paid attention to the laws of nature and wild spirits, and personified them by magic signs, which they believed forecast fate and explained natural phenomena.

Today, modern Kazaks are becoming more aware of this traditional knowledge from study of the oral heritage of myths, fairy tales, proverbs, and the animistic attitude to the world. These religions and rites can support the balance of nature. For example contamination of water by wastes and changes to the course of the river were considered as a sin. To cut a living tree was not allowed. Only dead standing trees and dried dung were utilized for heating. The Kazakhs had a special attitude toward wild animals and birds. It was prohibited to kill owls, eagle owls, woodpeckers, blue crowns, cuckoos, and martins. Their nests were never destroyed. Only trained and experienced hunters hunt wild animals.

The Kazakhs tried to choose a dry and sunny place for the construction of the *aul* or settlement, and they tried not to contaminate nearby water sources. The economic constructions and dwellings were built far from the water to give the wild animals an opportunity to go quietly to drink water. While arranging the settlement, every 30-35 days the *yurta* was moved to a new place, and the premises were smoked by *archa* and *garmala* (*adyraspan*) burnt with sera. Modern science has proved that the incubation period of microbes from dust lasts 40-45 days, and the tents and clothes and its smoking had a beneficial hygienic effect.

Housing was considered to be the holy place of the human habitant and therefore a guest entering the house always welcomed the spirits of the house/hearth - *pershte*. Guests should be given a good meal - a display of hospitality, but also a way to fix lack, wealth at home. A soap, made from the ash and powder (*opa*) of different herbs and *saksaul* have been used as an antibacterial, whilst paints (*enlik*) made from lichens, have been used in cosmetics.

Three types of economy traditionally existed in Kazakhstan: nomadic, semi-nomadic and settled economy, that is hay-mowing and farming of wheat.

The nomadic cattle breeders needed ecological knowledge and skills. Herds of sheep did not exceed 400-500 heads to ensure rationale use of the pastures and protection of soil from erosion.

In the settled *auls* the spring work of farmers, planting cereals (mainly wheat, millet, barley and oats) has to be carried out. Most cattle are taken away from the pastures, whilst the milk cattle are kept on local grazing land; the winter sheep folds have to be cleaned of manure, which is cut and exposed to air for drying, for use for heating the dwellings in winter time.

For successful economical activity attention must be paid to seasonal events, the arrival and departure of migratory birds, their nesting, the observation of stars in the sky. etc. The location of the stars, and other phenological observations, which are used by special categories of people (*esepshi*) to forecast what kind of year it would be for the economy.

In May, the heads of the villages (*auls*), families (*clans*) and tribes gather for the annual spring meeting (*kurultai*), where they divide up the land for the summer pastures (*jailau*), based on the number of lambs, whilst the movement patterns, choice of places to be passed through, and other important issues of were also resolved.

Today many of these traditions are already lost, however they should be revived, because alongside with ecological education they promote an increase in ecological consciousness of the population and these traditions could become an important part of ecotourism attractions.

For more detailed information on the role of traditional knowledge of local communities in biodiversity conservation, see Annex 8.

## **2.6. Overview of National System of National Parks and Protected Areas: constitutional basis, administrative structure, operational budget, brief description of main protected areas, present visitation and tourism aspects.**

An excellent and extensive system of strict nature reserves (*zapovedniks*) and other restricted use areas (*leshoz's*, *zakazniks*, etc.) forms a unique network of natural protected areas in Kazakhstan (see list in Appendix).

Currently functioning in Kazakhstan are 9 reserves (*zapovedniks*), 6 national parks, 60 reserve plots (*zakazniks*), 24 nature memorials of the state jurisdiction, 3 zoological parks, 5 botanical

gardens, several so-called “dendrological parks” (forest reserves); 3 wetlands are admitted to be of international importance in accordance with the Ramsar Convention, and 150 reserves and rivers are defined to have state significance. This network covers about 3 percent of total territory of the country but the different areas differ greatly in protection regime. The 9 strict nature reserves, which have total protection, cover only 0.3 percent of the territory of Kazakhstan. Total area of zapovedniks and national parks is 1 630 800 ha or 0.6 percent of total area of Kazakhstan.

The change in status of Kazakhstan since the collapse of the Soviet Union has obviously led to many significant changes in the management of these protected areas. Although many of the staff that gave the network a strong reputation for academic research are still in place, lack of operating funds has substantially reduced the work that can be done and this has not been focused towards practical conservation management.

The collapse of the Soviet Union resulted in a worsening socio-economic climate, particularly in rural areas of Kazakhstan. This has meant that local populations have had to increasingly rely on natural resources for their livelihoods, often unsustainably, and they have few alternative sources of income. The economic situation has also resulted in many activities that support biodiversity conservation, such as education and public awareness, legislative reform, and information technology suffering due to lack of resources.

However, there are factors that may enable new approaches to biodiversity conservation to be successful and sustainable. These include the historically strong protected areas system, a rapidly growing NGO movement, deeply committed individuals in the environmental movement, and general support at all levels for environmental conservation work.

The approach to biodiversity conservation of the former Soviet Union was based on strict protection, demanded a large amount of resources to maintain, and took little account of the needs of wider stakeholders. This approach is unlikely to be viable under current and future constraints. A modern approach of participatory and integrated resource management will require a totally new approach from government decision-makers, managers, the scientific community and other stakeholders.

In accordance with the Law of the Republic of Kazakhstan “On the Specially protected natural territories” dated July 15, 1997, 13 types of protected areas are specified: state natural reserves, including the biosphere reserves; the state national nature parks; the state nature parks; the state nature memorials; the state reserve zones; the state natural reserves; the state zoological parks; the state botanical gardens; the state dendrological parks; the forest of the specially protected territories; water reserves of special state significance or specific scientific value; wetlands of international importance; the plots of subsurface, representing a special ecological, scientific, cultural or other value.

The especially protected natural territories that provide conservation and retrieval of the biodiversity are the national property of the Republic of Kazakhstan. The state natural-conservancy fund includes zoological and botanical objects, i.e. exotic and endangered species, valuable, typical, unique species of animals and plants or communities; forest objects, i.e. forests of specially protected territories, as well as original patterns of forest culture production and field

protective cultivation; dendrological, i.e. some plants, trees and shrubs or groups of trees and shrubs which have scientific and cultural-historical value, original patterns of garden-and park culture; hydrological, i.e. water reservoirs of special state importance or scientific value; geological, geomorphologic and hydro-geological; soil, i.e. typical, unique and rare landscapes, standard sites of wild nature, landscapes of special recreational importance.

Unfortunately, the rate of establishing new protected areas in the republic have been very low during last 20 years (1978 -1998) - only 4 reserves and 4 national parks have been founded. The main reason for this is the reluctance of local authorities to withdraw lands from economic use and the lack of economic incentives to do so. Given the forthcoming privatisation of land in Kazakhstan, new approaches, including economic measures, are needed to preserve protected areas,. The Ministry of Natural Resources and Environment Protection has prepared, and the Government has adopted, a new “Scheme of the development and location of the specially protected natural territories”. The establishment of new reserves will enhance the protected reserved area of Kazakhstan by 1. 885 million of hectares (0.7% of the state territory), and will allow real protection of a significant part of the landscape and biological diversity of Kazakhstan.

A special role of the reserves is that long-term and multi-disciplinary research investigations of biological diversity take place in these reserves. Both the reserve research staff and research expeditions carry out these scientific investigations. In each reserve they keep a mandatory “Nature annal”, in which they annually include the major indicators on the status of all components of the protected ecological systems, providing an opportunity to track the natural processes occurring in the nature plots, isolated from the human activities.

In the reserves of Kazakhstan, the mountainous ecological systems of Tien-Shan (the reserves of Aksu-Djabagly and Almatinskiy) and Altay (Markakolskiy and Zapadno-Altayskiy reserves) are well represented. Wetlands are represented by Kurgaldzhinskiy and Alakolskiy, and partly by Naurzumskiy reserves; in the latter the most southern in Kazakhstan pinery on sandy soils is protected to a lesser extent. The ecological systems of the steppe zone on the territories of Kazakhstan’s reserves are practically lacking. Representation of deserts and semi deserts, which cover more than a half of the territory of Kazakhstan, is even worse: represented in only small parts of three reserves (Ustyurtskiy, Barsakelmesskiy and Alakolskiy) and one national park (Altyn-Emel').

It should be noted that only Aksu-Djabagly and Alamtinskiy zapovedniks and Altyn-Emel National Park can be used for development of ecotourism. This is because most zapovedniks are located a significant distance from large settlements and have no good access.

In Kazakhstan, more and more tourists visit the beautiful natural sites, including specially protected areas, every year. Amateur ecological tourism has developed rather quickly. The tourists are particularly attracted to picturesque landscapes in mountainous terrain. There is the possibility to see large and small waterfalls, whimsical rocks and scars all year round. Some national parks cover multiple natural zones: semi-deserts, steppe, mixed and coniferous forests, alpine meadows, eternal snows and glaciers. Ile-Alatauskiy national park located near Almaty city possesses all these habitat types.

Ecotourism in Kazakhstan has the following characteristics:

- visits are made to natural attractions on the basis of a scientifically justified rate of recreation load, which prevents the degradation of ecosystems,
- recreational activities which raise the spirits and strengthen health,
- environmental education of the population,
- provides a source of funds for specially protected areas budgets,
- provides opportunities for small businesses to service tourists; and
- provides employment and stable salaries/wages for part of local populations.

Unfortunately, in most cases tourism is large-scale and not well organized. These include trips to the country, picnics, fishing, spending the night in nature etc. This results in an excessive load in the place of recreation, cluttering up and degradation of eco-systems and fires. Such mass tourism initiatives do not generate any revenue for local budgets or the state budget, and no funds are received for protecting nature.

In Kazakhstan, nature tourism is poorly developed. There are about twenty private tourist firms who organize helicopter tours, mountain and alpine climbing, water trips (mainly rafting), ornithological expeditions, and visits to the most attractive and picturesque places. Private entrepreneurs do the same by acting as guides. Starting in the 1990's, state reserves and national parks started conducting environmental excursions and rendering paid services that gives them small revenue. To organize and carry out environmental tourism, reserves and national parks need a legal basis and additional funds.

A brief description of the main protected areas of Kazakhstan is provided in Annex 9.

### **3. OVERVIEW OF LINKS BETWEEN TOURISM DEVELOPMENT AND BIODIVERSITY CONSERVATION AND PLANNING**

#### **3.1. Description and critique of existing national strategy, plan or policy applied to any interaction between tourism development and biodiversity conservation and planning - i.e., national biodiversity strategy and action plans (NBSAPs).**

The Long-term Development Strategy of the Republic of Kazakhstan up to the Year 2030 "Environment and Natural Resources" details the development of nature-based tourism. The Programme of the Ministry of Natural Resources and Environment Protection of the Republic of Kazakhstan envisages, for the years 1998-2002, the formation of an ecological tourism system, improvement of the recreation properties of the landscape, and the organization of the environmental tourism zones in "Charyn Canyon" and "Dostyk" and existing "Altyn-Emel" parks, in the tourist-recreation zone "Katon-Karagaisky". Unfortunately, ecotourism in these territories is either not well developed or are not authorized. The tourism activities planned for the proposed Charyn National Park are given below.



**Fig. 9: Tourism-recreation system of the future Charyn national park**

Premise	Variety of natural landscapes from mountain and desert before intra-zonal, picturesque riverside of Charyn, beautiful climatic conditions, curative mineral springs in combination with unique natural objects - nature and cultural monuments create the favourable premises for organisation of all-the-year-round rest, treatments and tourism
Territory included in system	Delta of Charyn river, mountains of Toraigyr- Syugaty- Kurtogai, hot springs, sand dunes, lakes
Types of tourism, rest and treatment	Tourism - ecological, sports, specialized, survival school; Medical-health tourism, rest houses, hunting and fishing
Objects of display	State nature monument "Charyn ash grove"- relict of Palaeogene (30 million years ago) – Sogdiana ash; Charyn canyon, including valley of locks – landscape-palaeontological nature monument (Carbon mineral fossils); Kopaly – palaeontological nature monument - fauna and flora of early and late Pliocene; Moving sand dunes; "Derevyannoye" lake as a place for Chinese grass-carp fishing; Mountains of Syugaty-Boguty-Kurtogai - hunting area; Northwest part of Toraigyr valley - rally area
Recreational impact	Degradation of soil under tourists activity influence. As a result of soil compression the aeration is decreased, the superficial drainage is increased, freezing of soil there is early and deep and thaws late. Soil fauna is suppressed, the soil loses vital activity, the growth of roots is disturbed, plant growth decreases and plant mortality is increased. Forest growing conditions worsen, natural processes disturbed
Measures on protection from recreational impact	Preventing negative consequences of recreational impact requires organization of sustainable recreational use of natural resources with regulation of recreational load, development of use zoning to reduce "recreational over load".  The building of interesting, bright and attractive rest places and entertainment in recreational zones Introduction of "sparing" forms of rest and tourism. "Sparing" measure is the restriction of "peak" loadings on ecosystems, more uniform distribution of having a rest flows on seasons. Special development of recreational territories (view points, development of tourist tracks, signage) has the large importance for mitigation of recreational impact. Development of tourist tracks should keep restplaces close the track. Track use rotation to minimise degradation through overuse

In Kazakhstan, there are many regions with unique nature suitable for organizing nature-based tourism. But a lack of infrastructure and the decline of social economic development do not allow the involvement of these potential regions in the programmes of environmental tourism development in the Republic. The Zhibek Zholy Tourist Company is developing a State Project of creating a tourist route along the Great Silk Road, linking Eastern Kazakhstan, Almaty, and the Southern Kazakhstan regions. The work "Information Provision for Development of Environmental Tourism," has been fulfilled; it is making an assessment of the opportunities of environmental tourism in reserves and National Parks. In addition, 80 new sites for hunting and fishing are planned.

The Programme "Development of the Specially Protected Nature Territories Network and

Creation of the National Cadastre of Unique Nature Objects” for their inclusion in the Cadastre of the World Cultural and Nature Heritage is being implemented (1998-2000). The “Map of Tourist-Recreation Resources of Semirechye” has been prepared. The Global Environment Facility is developing the Project “Conservation of Biodiversity of the Western Tien-Shan“ including the “Aksu-Dzhabagly Reserve”. The Project plans to develop ecotourism in the reserves and adjoining territories. Registration of Kurgaldzhinsky Reserve as a biosphere reserve of international significance is also planned and includes programmes on conservation of biodiversity and development of ecological tourism.

Tourism activities are regulated by the Law of the Republic of Kazakhstan of 29 July 1992 “On Tourism”. Section 5 (Articles 17 and 18) of this Law is envisaging “protection of nature and cultural property of the Republic in developing tourist activities”. The Government of Kazakhstan has approved the “Procedure of Forestry Fund Utilization for Recreation Purposes”. In the Recommendations and in the Action Plan, developed by the IUCN IV World Congress on National Parks and Protected Areas (Venezuela, 1992), recommendations on the development of tourism in protected territories have been given. However many of these recommendations are not carried out in a practice.

Weak development of environmental tourism explains the lack of specialists in this type of tourism. At present, the Kazakh National State University, the Almaty State University, private Kazakh-American and Turan universities, and others train tourism specialists. Graduates of these universities are working successfully in the tourist business.

Development of environmental tourism depends first of all on financial investments in the construction and improvement of hotels, development of infrastructure, communications, technical facilities, advertising etc. The shortage of money and a lack of government support and a State programme is a limiting factor in developing ecotourism in Kazakhstan. Financial assistance is also required for reserves and National Parks of Kazakhstan.

Since July 1996, the Interim Working Group including the scientists and the specialists from various governmental agencies related to biodiversity started to develop the Kazakhstan National Biodiversity Strategy Action Plan (NBSAP). A brief description of the NBSAP development process in Kazakhstan is provided in Annex 6.

### **3.2. Analysis of main perceived problems and constraints at the national level (including negative linkages and threats of tourism to biodiversity conservation).**

#### **3.2.1 Political**

The government of Kazakhstan is currently preparing a Plan on Safety in the Sphere of Tourism. The plan says that travel safety includes personal safety of tourists, safety of tourists’ belongings

and minimisation of harm to the environment during travels. However, nothing is said in the plan as to how this will be achieved

A number of steps for the development of tourist industry as a priority sector for the country's economy are listed in another governmental document, "On Priority Actions for Development of Tourist Industry". In this document, the role of the Ministry of Natural Resources and Environment Protection is to coordinate with Tourism and Sports Agency schemes for tourist routes in national parks and also to determine quotas for hunting and fishing. It is obvious that, at present, there is little cooperation between government agencies responsible for development of tourism and environment protection. Such cooperation would be beneficial for protecting the environment from increasing impact of tourist activity.

There is no coordinating agency for ecological tourism, i.e. no governmental body that would unite representatives of the Ministry of Natural Resources and Environment Protection and Tourism and Sports Agency. Such a body could solve the problem of creating a functioning form of ecological tourism. Ecotourism is becoming a more and more popular type of recreation for Kazakhstan citizens and foreign visitors. It is necessary to elaborate the most optimal mechanisms to satisfy tourists demand whilst saving nature from destruction, to regulate flow of tourists so as to smooth tourist load on ecosystems; to create appropriate conditions for safety and recreation of tourists, and to keep vulnerable ecosystems and living creatures from tourist visits.

### **3.2.2. Economic**

Economic incentives for tourism development need to be developed. It is necessary to stimulate development of ecological tourism, because it has less impact on environment. It is necessary to charge higher fees for types of tourism that use natural resources (e.g. collection of flowers, seeds and other parts of plants, fishing, hunting, especially of rare and disappearing species) and to encourage such types of ecotourism like photo-safari, sports fishing (catch-release). There are insufficient investments in the development of tourism, and ecotourism in particular, in order that this industry would correspond to world standards.

### **3.2.3 Social**

There is not enough investment from the private sector in development of tourist business. This is because of the weakness of the tourism industry and a long waiting time for return on investments from this type of activity.

Workers in reserves and national parks can play an active role in development of ecotourism, however at the present time, these establishments have no human and financial resources to implement all aspects of ecological tourism. This includes environment protection, supply of all necessities for tourists and work with local populations. Workers in natural territories with increased protection do not distribute codes of conduct regulations to visitors of natural parks. Memos, which these workers distribute, do not include all rules of behaviour in protected areas. Income, generated by tourists visiting national parks, is not always allocated to the needs of protection and life support of wild animals and plants.

In addition, workers in national parks are not willing to cooperate with local populations, although it could be beneficial for both sides. Local populations merely do not participate in the development of tourism, do not know their rights, and can't realize its their potential for additional benefits from development of tourism in the particular location where they live. Local people could provide tourists with accommodation, food services, sell manufactured goods and souvenirs, home appliances, other folk art items, they could be guides, and educate tourists on how to behave when in nature.

The majority of people do not have a strong ecological consciousness, don't know how to behave in nature, how to use fire, or remove garbage for themselves. Many gather medical plants, flowers, mushrooms, berries, tree juice, destroy bird's nests and anthills, and break tree branches and bushes. This low level of ecological awareness of the population is caused by weak ecological education in schools and universities. The mass media does not adequately cover ecological problems, particularly those of protection of animals and plants. Only a small part of the population has a chance to watch famous TV programmes which feature nature documentaries, such as the "Discovery Channel", because it is broadcast only on paid channels. There is no local analogue of these programmes.

#### **3.2.4. Human resources**

Human resources, employed in the sphere of protection of biodiversity and development of tourism usually work separately, without coordination of their activity. Specialists interested in development of ecological tourism must be interested in preservation of wild nature for successful continuation of their business, but this common interest must stimulate collaboration between environment protection workers and those of the tourist sector in protection of biological diversity and wild nature in general.

Obviously, it is necessary to train specialists in evaluation of the influence of any type of tourism on environment. Students of tourist courses must be taught methods of tourist activity which don't harm environment.

#### **3.2.5. Biodiversity conservation per se (at all three levels: ecosystems, species and genetic)**

To preserve ecosystems, it is necessary to elaborate scientifically founded carrying capacity studies for each separate ecosystem visited by tourists; and identify the most vulnerable ecosystems in order to prevent their degradation. Coniferous mountainous forests, which prevail in the south-eastern parts of Kazakhstan, are more vulnerable than mixed and broadleaf forests. However the fir-tree forests are the most popular places for tourist recreation. Flows of tourists to these places are not counted and not regulated.

To preserve species, especially rare and vanishing, it is necessary to identify their habitat and to limit tourist visits to these places, especially during periods of nesting and growing of nestlings and other young animals.

The absence of legislation on protection, preservation and reproduction of flora in Kazakhstan allows unimpeded withdrawal and export of valuable selected plants, such as wild species of tulips (Kaufmanni and Greigii tulips, etc.)

### 3.2.6. Examples of bad practices and failures

Mountain and foothill landscapes are among the most attractive places for tourist visits in Kazakhstan. Usually they are also the most crowded. An especially heavy load is experienced by mountain ecosystems around the biggest city in Kazakhstan, its former capital Almaty (population 1.5 million) located on foothills of picturesque Northern Tien-Shan. The Ile-Alatau National Park was established here in 1996. At all times of the year these mountains attract more and more visitors. During weekends, a great number of cars go to mountains, some of them reach a rather high altitude (3000-3500 meters above sea level). It is clear that such heavy traffic contaminates air, water, ruins flora, disturbs inhabitants of the national park and forces them to leave their habitat and to go higher in the mountains. In the gorge of Malaya Almatinka river (just a few kilometres from Almaty) one still can see a warning sign “Beware, bears!” posted there 30 years ago, but no bears can be found around, because they left this disturbed place a long time ago. Ibisbill (*Ibidorhyncha struthersii* Vigors), a Central Asian endemic bird species, inhabits the Malaya and Bol'shaya Almatinka gorges. It is a rare bird, easily susceptible to danger of extinction in case of changing habitat. The considerable flow of tourists have put this beautiful and rare bird on the edge of extinction in Zailiysky Alatau mountains.

The beautiful and picturesque landscape of the foothills around Almaty suffer from litter and fires caused by carelessness. Tourists gather berries, mushrooms, and medical plants, and trample the soil. The foothills of Zailiysky Alatau Mountains are habitats for wild relatives of cultivated plants, including Sivers and Nedzvetsky apple, wild apricot, wild grapes. Clearing of ground for construction of houses and adjoining plots has almost eliminated this valuable genetic resource. Presently, a project of the programme of GEF small grants projects is being implemented to restore wild apple forests in the region.

Some ignorant visitors paint graffiti on rocks, thus distorting the look of nature. In Almaty region (180 km from Almaty), there is a unique ancient monument “Tanbaly tas”, dated back to bronze and iron eras. Because this monument is not protected, cases of vandalism have become more frequent and whole pieces of the rock with ancient paintings are taken away.

Ever increasing numbers of tourists, coupled with their inadequate behaviour in nature settings, cause degradation of natural ecosystems. A carrying capacity for the ecosystem is not determined; and flow of tourists is not regulated. Tourism in Kazakhstan still has a disorganised, spontaneous character, even in national parks. Unfortunately, accidents happen sometimes in the mountains because of absence of adequate instructing and preparation of tourists.

To put tourism on an organized basis, an adequate legislative base is necessary, as well as creation of conditions for safe tourism from both visitor and environmental points of view. It is necessary to make changes to the legislation regulating development of the tourism industry and

ensuring environmental protection. Fees received from visitors of natural parks must all go to the improvement of the material base of the park, to wild animal care, and to improved conditions for tourists. In future, it is necessary to focus mainly on the development of ecological tourism, i.e. to limit dramatically the entrance of cars into protected areas. Travels should be accomplished on bikes or on foot, on horses, jackasses, and other ecological, or "green", transportation. "Harvesting" of natural resources, including fishing, hunting, gathering of herbs and fruits, etc. should be limited.

The above examples just partially characterize the disregard of biodiversity protection as the result of tourist activity in Kazakhstan. The neglect of these issues at the political level can be seen in the example of formation and realization of the State programme "Revitalization of historical centres of the Silk Road, preservation and successive development of cultural heritage of Turkish-language states, creation of tourism infrastructure". Specifically for the realization of this program, a national company called the "Silk Road" was created. Implementation of this program is planned till the year 2012. The main planned activities are: restoration of historical centres, creation of tourism infrastructure and construction and reconstruction of roads. Considerable money is planned to be channelled to this programme. However, there is not a single word about possible impact on biodiversity, or the natural environment, and about measures directed towards environmental protection either in the project document of the Programme "Revitalization of the Silk Road", or in the activity reports of the "Silk Road" company. In this situation, we can only hope the programme will not be implemented. There are prerequisites for this. For two out of 14 years of the realization of the program only 1.6 percent of planned investments have been allocated.

Another example of a weak approach to planning of tourist activity, which is far from being ecological, is the "Action plan for formation of ecological image of Kazakhstan for the period 2000-2003", which was adopted at the end of 2000. This document also does not stipulate any actions to prevent negative impact of tourist activity on biodiversity.

But the most glaring example of a failed bureaucratic approach by the Ministry of Natural Resources and Environment Protection and of the Government of the Republic Kazakhstan in general to the "development of ecotourism" is Resolution of the Government of the Republic of Kazakhstan from September 9, 2000 number 1371 "On Development of Ecological Tourism around Astana city". There are just two intentions, but the text shows, that the ideas of the central executive authorities on development of ecotourism in the country are simply the creation of international hunting complexes near the new capital to the detriment of environmental protection goals. The original text of the resolution is given below:

For the development of infrastructure and ecological tourism around Astana city the Government of the Republic of Kazakhstan decrees:

1. To agree with proposal of the Ministry of natural resources and environment protection of the Republic of Kazakhstan about creation of international nature-tourist complex "Astana" with construction of appropriate hunting complex.
2. Ministry of natural resources and environment protection of the Republic of Kazakhstan must take all necessary actions for realization of this resolution. Actions to create hunting complex should be implemented at the expense

resources allocated to the Ministry of natural resources and environment protection of the Republic of Kazakhstan in the state budget for years 2000-2001 for construction and reconstruction of objects of environment protection.

#### **4. Proposed strategies and solutions**

The examples and analyses of existing connections between development of tourism and conservation of biodiversity in the Republic of Kazakhstan force us to acknowledge the growing negative trends in implementation of state policy in biodiversity protection. At the same time, we can see interest from both the state and the public for development of types of tourism based on utilization of natural potential of the country, including ecotourism. The combination of these factors supposes an increasing impact on the biodiversity of the country. In this situation, development of ecotourism can become one of a few economically viable mechanisms of preservation of biodiversity in Kazakhstan. However, to enable the functioning of this mechanism in our country, several conditions need to be secured.

##### **4.1 Policy-oriented**

###### **4.1.1. Lobbying of biodiversity protection interests in highest echelons of state power**

Lobbying of biodiversity protection interests among the President's close circle and in the Parliament of the Republic of Kazakhstan by the executive and legislative authorities of the country is a key factor in attracting attention to this problem. As we already said, there is a growing legislative base for environmental protection in Kazakhstan and sound strategies have been elaborated. Implementing them would facilitate preservation of biodiversity and serve as stimulus for the development of nature tourism. However, the main emphasis in prospective planning of the development of the country was made on the basis of exploitation of the natural resource base without calculation of the lost income from the impact on biodiversity. Therefore, the first task is to analyse missed opportunities and to create a prognosis of financial gains for the state budget from sustainable utilization of natural potential of the country in implementation of tourist activity. Since it is impossible to do such analysis for the whole country it could be limited to one pilot region, for example Almaty oblast. Results of this analysis should serve as a tool for lobbying.

###### **4.1.2. Elaboration and approval of the State program of development of natural tourism**

Successful lobbying of problems of preservation of biodiversity and utilization of natural potential of the country for the development of tourism should lead to elaboration and approval of a State programme of development of natural tourism. We deliberately avoid using the word "ecotourism" because, in the initial stage of planning of tourist activity using natural potential, an emphasis will be made on types of tourism connected with hunting, fishing etc. as those, according to the government provide the largest economic benefits. Such programme must be cross-sectoral and all interested organizations including Ministry of Natural Resources and Environment Protection should take part in its preparation. While preparing the programme, it should be necessary to pursue the goal of creation of a special Council on natural tourism. The programme should then be approved by government resolution.

In the absence of a State programme, regional natural tourism programmes based on the existing legislation, and also on local priorities of socio economic development and nature protection, should be developed.

It is also necessary to elaborate a Programme of development of ecotourism in specially protected territories.

#### **4.1.3. Legislative and normative base**

The future State programme of development of natural tourism should outline improvements of the legislative framework in order to guarantee step-by-step development of natural tourism and environment protection. However, it is necessary to pursue compliance to existing legislation and implementation of elaborated programmes and strategies for development of tourism and protection of biodiversity.

To guarantee compliance with legislation the government and the agencies responsible for the development of natural tourism should prepare an appropriate normative base. Compiling legislative approval of the conceptual definitions in the sphere of biodiversity and natural tourism is obligatory.

It is also necessary to toughen legal regulation of illegal hunting and trade of objects of wild nature, trade and harm of historical and cultural valuables, illegal archaeological researches and defilement of sacred objects.

#### **4.1.4. Institutional base**

Realisation of the complex of measures directed towards maintenance of a balance between development of natural tourism and preservation of biodiversity is possible only under condition of strict division of responsibilities of central executive bodies responsible for planning and implementation of the corresponding activity. However, in the case of our country, such division is impossible until reform of the system of executive authorities is finalized.

#### **4.1.5. Activity connected with the membership of Kazakhstan in international organizations and agreements (conventions)**

Membership of Kazakhstan in organizations, agreements and conventions somehow related to problems of biodiversity, conservation of natural and cultural heritage, development of tourism brings essential political and financial benefits to our country. However, not all opportunities and advantages are utilized. It is necessary to pursue increased participation in appropriate programmes, agreements and processes including liquidation of debt on membership fees and other obligatory payments. For example, the World Heritage Convention will mobilize resources for preparation of nominations of objects of natural and cultural heritage to be included into the World Heritage List. This will strengthen the tourist potential of the country and force the state to pay more attention to safe keeping of such objects.



International organizations and convention secretariats should treat the Republic of Kazakhstan more strictly if it does not fulfil its obligations and apply appropriate measure, for example, in an activity related to membership of CITES, as the government should not encourage hunting and trade of species included on lists of this convention, and should maintain control over illegal collection and trade of caviar.

## **4.2. Economic**

### **4.2.1. State financing of environment protection and development of natural tourism**

To plan annual increases of financing of activities connected to functioning of natural territories with increased protection, researches in the sphere of biodiversity, and development of natural tourism, it is impossible to accomplish everything so there should be targeted spending of resources gathered by the Republican and regional funds of environment protection. At present, just 30 percent of these resources are spent on environment protection.

### **4.2.2. Calculation of the economic importance of biodiversity, bioresources and natural tourism**

To change attitudes towards protection of biodiversity and development of natural tourism it is necessary to do a more thorough analysis of their importance as components of national economic activity.

### **4.2.3. Taxation and investments**

Development of natural tourism in Kazakhstan depends on the tax climate in the country. The taxation legislation in the Republic of Kazakhstan is far from perfect. High taxes are a restraining factor for development of “creative activity” in the country. It does not encourage national agricultural and industrial production, handicrafts and development of domestic tourism including development of necessary infrastructure. This situation has brought domestic consumer goods market to depend on imports.

A project of the new Tax Code, which is being discussed in the country, may decrease taxes for domestic production. However, this document stipulates 30 percent tax on financial assistance directed to the country in the form of grants for realisation of projects for environment protection. If this norm will be approved, it will sharply cut down the amount of assistance provided. To strengthen positions of natural, and ecological tourism particularly, it is necessary to pursue reduced taxation of this activity.

A programme of internal crediting of the natural tourism must be elaborated. It is also necessary to attract direct investments for the creation of infrastructure of financially stable projects for natural tourism.

### **4.2.4. Social sphere**

Considering that the rural population is in a hard social-economic situation it is necessary to take measures for priority creation of tourist-recreational zones in regions with minimal living standards (Almaty, Kyzyl-Orda, South-Kazakhstan). In reality, exactly these regions have the best potential for the creation of such zones. For efficient functioning of objects of natural tourism and greater involvement of local populations in this activity, help is necessary in realizing of the importance of traditional knowledge and handicrafts.

It is also necessary to determine ways and forms of participation of the local population in organization of ecotourism in protected areas and to promote social-economic benefits for local populations from development of natural tourism. Coordinated investments into local infrastructure (for example, education, health, and communications) will improve not only the life of local indigenous populations, but will also make a good impact on safety of tourists. Considering the unfavourable situation with regard to energy supply of regions of development of ecotourism it is necessary to provide assistance to the development of alternative sources of electricity and heat supply (solar batteries, portable hydropower stations and wind stations). Implementation of these measures will improve life conditions not only of local population, but also visiting tourists'.

#### **4.3. Human resources (including education and training)**

There is no problem in Kazakhstan with preparation of specialists for studying of biodiversity and environment protection. For development of natural tourism it is necessary to introduce special new topics in state and non-state universities of the country. It would be wise not to train too many specialists in this sphere, because only real development of the sector can define the emerging needs for human resources. At this stage, it is important to adjust application of personnel knowledge to the needs of ecological tourism. Improvement of qualifications, juridical and environmentalist knowledge of personnel (rangers and foresters) of natural protected areas are more immediate problems. Considering that the majority of these personnel are recruited from rural populations, it is vitally necessary to elaborate training courses in the Kazakh language. It is also necessary to organize proper training courses for policemen participating in environment protection raids.

There are museums in most of reserves in Kazakhstan, and their personnel are responsible for educational activities. It is necessary to increase influence of reserves on conservation consciousness among local populations to increase establishment of partner relations for organization of natural tourism.

#### **4.4. Biodiversity conservation *per se* (at all three levels: ecosystem, species and genetic)**

Problems of biodiversity conservation and its separate elements are the key questions for planning and implementation of tourist activity. In order to examine biodiversity conservation at all three levels (ecosystem, species and genetic), Aksu-Djabagly Reserve located in Western Tien-Shan Mountains will be used as a model. The majority of visits to the reserve are limited to routes in the buffer zone, which has the same biodiversity and landscapes as the protected zone itself. Several hiking and horse-riding routes are located on the territory of the reserve as well.

Since the reserve is located in an arid zone, the danger of fires is very great there. Strong winds and dry plants help fire to spread very fast and represent a real threat to some ecosystems, such as juniper sparse forests, the dominant species of which are Turkestani and Zerafshan junipers. In order to avoid fire penetration from outside of the reserve boundaries, fire-prevention ploughing and mowing dry vegetation is implemented on the slopes of the mountains within the buffer zone. Implementation of these measures decreases the probability of fires during the tourist season.

There are two species of tulips growing in the Aksu-Djabagly reserve: tulip Greigii and Kaufmannii, which were the genetic stock for two groups of commercial tulips of the same name now widely cultivated all over the world. To preserve genetic resources of these species in the reserve, surveys have been conducted, which revealed about ten varieties of each type, preservation of which is now controlled both in places of natural growing and in the nursery of the Main Botanical Garden of the Republic of Kazakhstan. The same approach is used for various forms of wild apples: Niedzwetzkyi \_ Siversii apples, primogenitors of cultural kinds.

#### **4.5. Examples of best practices in linking tourism development and biodiversity conservation planning**

Aksu-Djabagly Reserve (zapovednik) is a model of environmental protection activity and has many features of objects of primary development of ecotourism. These circumstances let it to be selected for implementation of the GEF Central Asia Transboundary Biodiversity project started last year. When this project was designed, questions of maintaining the balance between protection of biodiversity, preserving interests of the local population and development of tourism were considered in the planning stage. Excerpts from the project document prepared in 1997 by a group of Kazakhstan scientists and specialists from Fauna and Flora International (UK) are provided below. In our opinion, realization of such projects could serve as the best example of maintaining the balance of the interest between development and environment.

Aksu-Djabagly zapovednik represents an important component of the West Tien-Shan ecosystem of Central Asia (Kazakhstan, Kyrgyz Republic, Uzbekistan and Tadjikistan). This is an area of high biodiversity that is of global importance. The West Tien Shan is species rich with some 3,000-recorded species of flora and fauna, of which 170 are endemic. This astonishing range of biodiversity includes many that are endangered elsewhere in their range and threatened globally. The area is affected by almost the entire range of climatic conditions from sub-tropical to tundra to glaciers; consequently it possesses semi-arid, forest and mountain ecosystems. Characteristic mammal species include; the snow leopard (*Panthera uncia*), Menzbir's marmot (*Marmot menzbien*), white-clawed bear (*Ursus arctos*), lynx (*Lynx lynx*), Central Asian mountain goat (*Capra sibirica*) and argali (*Ovis ammon*). Avifauna includes; golden eagle (*Aquila chrysaetos*), Eurasian eagle owl (*Bubo bubo*), lammergeier (*Gypaetus barbatus*) and Himalayan griffon vulture (*Gyps himalayensis*). The area has a large number of species which are useful to humans, including: medicinal plants (over 220), lucerne, apples (the natural genetic diversity may provide potential for commercial variety resistance to scab, frost, drought, etc.), nuts (including the endemic walnut forests), tulips (63 species occur in the West Tien-Shan, whilst the diversity of only 4 species is used commercially), many ornamental garden plants, and grapes.

##### **4.5.1. Nature conservation**

Aksu-Djabagly zapovednik covers an area of 860 sq. km. This represents approximately 23 percent of the area of the West Tien Shan within Kazakhstan, and hence covers a fairly representative area of this ecosystem. The size of the zapovednik appears to be sufficiently large to conserve viable populations of most of the species occurring within it. However, it is not large enough to contain viable populations of certain species, especially those of large mammals and rare species such as; wild sheep, Menzbir's marmot, pontiac hawthorn, apple, pistachio, grapes and walnut. In addition, the zapovednik does not include some populations of species of conservation importance. Twenty-seven percent of the area of the zapovednik is covered by forest. Figures for other habitats/landscape types are not available.

#### **4.5.2. Diversity**

Zapovednik contains a high natural diversity and concentration of species and habitats. Many of these species are rare or endemic:

- 78% of all vertebrates found in the West Tien Shan occur in Aksu-Djabagly zapovednik;
- 57 species of higher plants, 62 animals and 72 wild relatives of cultivated plants occurring in Aksu-Djabagly zapovednik are listed in the Red Data Book of Kazakhstan;
- 132 wild relatives of cultivated plants occur in Aksu-Djabagly zapovednik;
- All of this diversity is largely natural, except in low mountain landscapes where there is significant anthropogenic influence.

Generally, the site should be managed to maintain the existing diversity. In those areas where there has been significant anthropogenic influence, the site should be managed to improve diversity. Management should also address the fact that the (genetic) diversity of populations of large mammals and raptors has reduced over the past few decades. The diversity of the site is mainly dependent on the diverse mountainous landscape and the relatively low levels of anthropogenic influence.

#### **4.5.3. Naturalness**

75 years of strict management at Aksu-Djabagly zapovednik has meant that the features are mainly completely natural and natural processes have been maintained. However, in certain areas, especially in the low mountain areas close to the boundaries (in particular the northern), natural processes have been modified by anthropogenic influences. The main ones being:

- Cattle grazing, animals traverse the zapovednik on their way to a watering trough.
- Geological and mining works (although these are no longer in use).
- Hay making.
- Littering.
- Bee farms.
- Fires
- Visitors (including large scale, unorganised tourism)
- Poaching
- Logging

This high degree of protection means that the zapovednik means that species are all dependent on natural, rather than modified, habitats. The site is therefore one of the least disturbed and most natural sites in the Kazakhstan part of the West Tien-Shan. With careful management of sites currently affected by anthropogenic influences, natural values in all areas could be restored.

#### **4.5.4. Rarity**

The unique landscape of the West Tien-Shan, it's relatively small area compared to other landscapes of Kazakhstan, and the relatively high levels of endemism in the area, mean that many of the species and features are naturally rare. However, increasing anthropogenic influences have compounded this rarity. Most of these features are unique to the West Tien-Shan and are therefore very rare and endangered. Important rare features in Aksu-Djabagly zapovednik are:

- Biodiversity; endemic species and genera of plants and animals, large mammals and raptors;
- Landscape; canyon of the Aksu river;
- Hydrology; Darbaza locality, lakes in the upper reaches of the Aksu river;
- Palaeontology; Jurassic fossils at Auliye and Karabastau;
- Cultural; Petroglyphs in the Kaskabulak high mountain area.

Other important rare features neighbouring Aksu-Djabagly Zapovednik are:

- Juniper forests in Sayramsu;
- Walnut forests in Ugam;
- The Badam-Sayram population of Menzbir's marmot.

#### **4.5.5. Fragility**

The West Tien-Shan landscape is still very young and dynamic, which makes the area naturally fragile. In addition the high degree of naturalness of the area makes habitats very fragile when influenced by anthropogenic factors. However, experience from the zapovednik itself and similar sites has shown that if these factors are removed, the ecosystem shows a high degree of recoverability.

Factors, which influence this fragility, are:

- Soil erosion of the steep slopes;
- Fierce fires;
- Geodynamics processes;
- Mud flows, heavy showers etc.;
- Natural weathering processes;
- Anthropogenic impact, including technogenic pollution;
- Low number and density of the population of rare and endemic species of plants and animals on the edge of their habitats.

#### **4.5.6 Typicalness**

Aksu-Djabagly zapovednik is very typical for the West Tien-Shan ecosystem. As it is in the north-western part of the West Tien-Shan, it does contain some features that are less typical of the West Tien-Shan such as a slightly higher rainfall. It contains very high percentages of the many different features of the area. The high degree of naturalness of the site compared to other similar sites, means that it is certainly one of the best and most typical sites in Kazakhstan of the West Tien Shan. Indicators of this typicalness are:

- Approximately 75% of the biodiversity of the West Tien-Shan occurs in Aksu-Djabagly zapovednik;
- 48% of the avian biodiversity of West Tien-Shan is found in Aksu-Djabagly zapovednik;
- 72.5% of the vertebrates found in the West Tien-Shan occur in Aksu-Djabagly zapovednik;
- 37 of the 129 vertebrates listed in Red Data Book of Kazakhstan occur in Aksu-Djabagly zapovednik;
- 15 of the 17 vegetation types of the West Tien-Shan occur in Aksu-Djabagly zapovednik;
- 114 of the 180 vegetation formations of the West Tien-Shan occur in Aksu-Djabagly zapovednik;
- 221 species of fungi are found in Aksu-Djabagly zapovednik, 254 are found in the West Tien-Shan;
- 63 of the 80 species of bryophytes of the West Tien-Shan occur in Aksu-Djabagly zapovednik;
- All of the landscape types and sub-types of the West Tien-Shan occur in Aksu-Djabagly zapovednik;

- The geodynamic processes occurring in Aksu-Djabagly zapovednik are also typical for the rest of the West Tien-Shan;
- The Jurassic fossils at Aksu-Djabagly Zapovednik are typical and the best examples of those of the West-Tien Shan.

However, the following rare, endemic and important species are under-represented in the zapovednik: Menzbir's marmot, pontiac hawthorn, pistachio, *Thesium minkwitzianium*, *Cousinia grandifolia*, *Ferula leucographa*.

#### 4.5.7. Recorded history

Much of the research carried out in Aksu-Djabagly zapovednik over the past 75 years has been published in the transactions of the zapovednik. All monitoring data has also been recorded. However, lack of resources has meant that research conducted since the independence of Kazakhstan has not been published. More specific details are currently unavailable.

#### 4.5.8. Potential for improvement

The recoverability and viability of Aksu-Djabagly zapovednik has been proven the 75 years of management. Plant formations, including tree and creeping junipers, thickets of deciduous shrubs, different variations of meadows and steppes have been successfully restored during this period.

There is a high potential for the restoration of the populations of rare and threatened species such as: hoofed mammals, gallinaceous birds, *Marmota caudata*, *Korolkowia sewerzowii*, *Rheum maximoviczii*, tulips and other species.

The staffs of the zapovednik have generally been trained to a very high standard. There is however a lot of potential for staff development in key areas, largely as a result of the new situation due to the dissolution of the Soviet Union and changing approaches to conservation management. These areas include; management planning, community conservation and ecological/ecosystem approaches.

There are several aspects that are rapidly developing that will have a negative impact on biodiversity conservation, including:

- Energy supply crisis;
- Overall deterioration of living conditions;
- Technogenic chemical pollution from Shimkent industrial centre;
- The low level of ecological awareness amongst local populations;

Wider considerations:

- Optimise the zapovednik's boundaries and include the natural habitats of Menzbir's marmot and wintering grounds of wild sheep and other important and rare species;
- Set up a network of protected areas under the aegis of the zapovednik (zakazniks, monuments of nature, genetic reserves);
- Ensure that the zapovednik forms an integrated part of the West Tien-Shan ecological unit.

#### 4.5.9. Evaluation for landscape

The key aesthetic qualities of the landscape are the:

- Alpine types of relief;
- Contrasting combination of glaciers, ice-fields, cliffs, subsidence and mountain meadows;

- Presence of open juniper forests with unique medicinal properties;
- Brightness and heterogeneity of plant communities and the abundance of decorative and fragrant shrubs and grasses;
- Beautiful canyon of the Aksu river, and other beautiful places; canyons and waterfalls on the Kshi-Kaindy river, Darbaza on the Baldabrek river, etc.;
- Openness and panoramas of the landscape;
- Opportunity of meeting wild animals: bear, mountain goat, wild sheep, Siberian deer and many interesting species of birds;
- Presence of exposed, well preserved fossilised Jurassic plants, insects, fishes and flying lizards;
- The highest and best preserved petroglyphs in Kazakhstan;
- Cool mountain climate and clean water.

#### **4.5.10. Evaluation for public use and access**

No recreation or tourism facilities exist, although there is an unquantified amount of unorganised tourism that occurs within the zapovednik.

The main features of interest to the public are:

- The diverse and attractive landscape;
- The high, rare and natural diversity;
- The easy accessibility of the zapovednik.

Benefits to the public include:

- Recreational (e.g. horse riding);
- Educational (raising environmental and conservation awareness);
- Semi-scientific (e.g. specialist botany and ornithology tours).

Benefits to the site include:

- Economic benefits from entrance fees, etc.;
- Expansion of scientific and public links;
- Development of ecological consciousness;
- Attraction of sponsors.

Parts of the site should probably remain closed, especially in core and fragile areas. The site has had little access for 75 years, and as such is representative of an ecosystem relatively free of anthropogenic influence. Allowing public access would perhaps cause irreversible damage to natural habitats and processes. Areas and levels of public access need to be carefully determined.

#### **4.5.11. Evaluation for social and community aspects**

The general socio-economic situation is serious:

- 80% of local community are unemployed; most people have no instant source of income;
- In 1987, a large chicken farm-factory was set up near Djabagly village, but has now virtually shut down. Most of the inhabitants were employed in the factory;
- The local collective farm, the other main source of employment, is also no longer operating;
- Virtually the entire local population lives from small subsistence farming;
- People cannot afford gas and hence rely on wood for cooking and heating (84% use firewood for heating), resulting in a serious fuel crisis;
- Local people clearly understand that cutting trees is damaging the environment; 60% indicated tree cutting was largest influence on the zapovednik and surrounding areas;
- Other human influences degrading the environment that have been indicated by local communities are; soil erosion (60%), cattle grazing (12%) mismanagement (6%), and poaching (12%);
- There is a heavy reliance on natural resources, many of these are found (and used) inside the zapovednik; 45% of the local people rely on them for food, 30% for clothes, almost 100% for medicines;

- However, the majority of local people believe the zapovednik should remain and they recognise the potential it has to benefit them.

Other stakeholders include:

- Local rayon and oblast administration (involvement in any activities outside the zapovednik);
- Adjacent leskhoz and forestry enterprise management (currently little interaction, but huge potential for extension of biodiversity conservation activities to these areas);
- Local schools and academic institutions (currently little involvement but a large potential);
- Visitors (currently largely unorganised);
- Local businesses (e.g. the nearby chicken farm used to employ 1200 people, now only 120) (offer opportunities for local economic development and alternatives to unsustainable natural resource use).

Positive interactions between stakeholders and the site include:

- Educational; the museum, etc. help raise environmental awareness;
- Conservation of natural resources; e.g. water and fuelwood;
- Scientific; the site is important for furthering scientific research into natural habitats and processes;
- Aesthetic; the site is of significant aesthetic value;
- Social aspects; e.g. employment of local people by the zapovednik.

Negative interactions between stakeholders and the site include:

- Contradiction of aims and interests of economic development and nature conservation;
- Lack of direct benefits flowing to local populations;
- Lack of (or illegal) access to natural resources within the zapovednik;
- Lack of integration of zapovednik activities into other land uses in the area.

These negative interactions could be addressed by making local populations economically and socially interested in maintaining the current status of the reserve and expanding range of its activities. Local people could benefit from the site by getting jobs in the reserve infrastructure, using natural resources in the zapovednik sustainably, and receiving benefits from the resources flowing into the zapovednik (e.g. from recreation).

#### **4.5.12. Evaluation for educational use and interpretation**

Aksu-Djabagly zapovednik has a large museum with many exhibits and an auditorium at the zapovednik central office. This has acted as the focus for education and interpretation. However, lack of resources has meant that this is now poorly maintained and requires refurbishing and modernising. There are no educational facilities inside the park, as access for education is not allowed under zapovednik management activities. There is an enormous potential to extend educational/awareness activities outside the zapovednik boundaries, through working with the many existing schools, colleges, NGO's, newspapers, radio and TV stations and scientific institutions.

However, the state budget for education has decreased from 7 percent in 1991 (the year of independence) to 3 percent in 1997, so any educational programmes must take this lack of resources into account.

Several factors make the site very suitable for education and interpretation:

- Unique natural landscape preserved in original condition;
- Easy accessibility, locally and nationally;
- Existing infrastructure; museum, etc.



The main areas of potential are:

- Refurbishment and modernisation of the existing museum exhibits;
- Development of educational trails;
- Development of educational potential in the local area (e.g. for local schools).

Currently, the site has few links with other sites, organisations and institutions. There is enormous potential to re-establish links with other zapovedniks and national academic institutions. In addition there is potential to establish new links with NGO's and local schools and groups, for using the site as a centre for environmental protection.

#### **4.5.13. Evaluation for research/study**

Aksu-Djabagly zapovednik has a long history (75 years) of detailed biological research (details are elsewhere in this report). The zapovednik has seven permanent scientists and three lab assistants. However, over the past few years the resources available for research have dramatically increased, with a resulting decrease in the amount and quality of research conducted and the amount of research results published.

Aksu-Djabagly zapovednik is ideally suited to research and study. The primary objective of the site was as a place to study biological processes free from human influence. As such it has a long history of detailed scientific research. In addition it is an area typical of the West Tien Shan ecosystem and contains many rare and threatened species and habitats that provide excellent opportunities for research.

There is also a huge potential for research at Aksu-Djabagly zapovednik. In particular in the areas of:

- Expanding and using the long history of biological research to an ecosystem approach to research;
- Applying the research to assist with defining management objectives;
- Social research; almost no social research has been conducted with communities around the zapovednik; this will be essential for successful future management of the zapovednik, especially in the sustainable use of natural resources.

The priority needs for developing research in Aksu-Djabagly zapovednik are:

- Technical equipment;
- Scientific resources;
- Professional development of the staff;
- Designing a common programme to monitor state of ecosystems, dynamics of natural resources based on unified methods of information collection.

For a brief description of the objectives and prescriptions of the Aksu-Djabagly Zapovednik Project Case Study, see Annex

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## **Annex 1. Historical details on dominant types of tourism practiced**

Previously in the USSR, including Kazakhstan, the following types of tourism were priority:

- children’s tourism;
- amateur tourism;
- medical-health tourism;
- ecological and cultural tourism; and,
- tourist travels abroad, international exchange tourism

### *“Children’s Tourism”*

Children’s tourism is travel-related educational activity among children and teenagers from educational establishments (schools, colleges) under general educational programmes, in centres of additional education, such as so called pioneer houses (analogy of boy scout centres), and children tourist stations which implemented programmes on tourist preparation. There was an extensive network of so-called pioneer camps and tourist bases offering local area tourism. Pioneer camps functioned only during the summer time. Practically every large industrial or

agricultural enterprise, scientific institute or governmental agency had its own pioneer (boy scout) camp or a tourist base. In most attractive recreational regions (like Crimea, for example), all-Union pioneer camps were located; the most famous among them was “Artek,” which, along with a few others, functioned year round.

Presently the majority of pioneer camps and tourist bases in the Republic of Kazakhstan are privatised and don't serve their primary goal to accommodate children in summer holidays. Many of them are neglected and destroyed.

Railroad trips to national republics of the USSR were very popular during school vacations. The most visited were ancient cities of Central Russia and Central Asia, as well as tourist attractions in the Baltic republics.

#### *Amateur tourism*

Amateur (or sport/health) tourism was a public movement, as well as travel carried out by tourists at their own expense, or with the financial support of the state or public organizations, by utilizing active means of transportation of various complexity. Amateur tourism developed patterns of behaviour in different natural conditions, during natural disasters, and helped to develop concern for nature and the ability for environmental protection. Sport/health tourism took advantage of a well developed network of tourist bases which offered various route options, such as hiking, horse riding, water way routes etc.

Presently majority of tourist bases and mountaineering camps are privatised. A few of them have been renovated and now they can offer services for sport/health tourism.

#### *Medical-health tourism*

Medical-health tourism was the most popular type of tourism for people from different age and income groups. It was especially indispensable for people who had an acute need for recreation and medical treatment. A network of so-called recreation houses and sanatoriums were located in areas with unique recreation potential, usually in coastal and mountainous regions. Many industrial and agricultural enterprises, as well as scientific institutes and governmental agencies, owned such medical-recreational facilities.

Currently the majority of them are privatised and don't serve their primary goals. Just a few of them, located near big cities, are used as hotels and guesthouses or are neglected.

#### *Ecological and Cultural tourism*

Ecological and cultural tourism includes visits to natural, historical, and cultural monuments, protected natural territories, and natural and cultural heritage attractions. There was no concept of ecological tourism in Soviet times. However visiting natural monuments, wild, intact and protected natural territories (except national parks, which were closed to visitors), was very popular.

“Cultural-cognitive” tourism was a very popular activity. The main centres of such tourism were Leningrad and Moscow, cities included in the so-called “Gold Ring” (capitals of ancient Russian kingdoms and centres of church culture in Central Russia), and the ancient Muslim holy places in Central Asia (Bukhara and Samarkand in Uzbekistan and Turkestan in Kazakhstan). Many people also visited the estates of Great Russian writers, composers and artists.

### *Youth, Family and Weekend tourism*

This type of tourism was very popular in the USSR and allowed many people to visit different places in the country at comparatively low expense under medical-health and cultural-cognitive tourism programmes.

## **Annex 2. Description of Kazakhstani Ecosystems**

Kazakhstan is distinguished by its great variety of ecosystems, from semi-arid forest-steppes to cold continental semi-deserts and deserts to extensive mountainous. Areas. Following is a brief description of the main ecosystems.

Name of ecosystem	Area	
	Million ha	% of total area of Kazakhstan
Forest	11.5	4.2
Forest-steppe	3.6	1.3
Steppe	76.2	27.8
Desertified steppe	22	8
Desert	120.6	44
Mountains and foothills	32.9	12
River valleys and lakeshore	7.4	2.7

**Table: Ecosystems. Source: NBSAP, 1999**

*The Forest-Steppe Ecosystem* exists only in the northernmost parts of Kazakhstan at the plains of West-Siberian lowland and occupies about 1.3 % of total land area. Aspen-birch and aspen forests are typical of the grey forestry grounds and meadow steppes on chernozem (black earth) grounds is typical of Kazakhstan lowlands. The meadow steppes differ from others by possessing higher species diversity per unit area, but the majority of meadow steppes are being ploughed up for agriculture.

*Steppe Ecological Systems.* As the climate conditions in Kazakhstan differ, so the ecosystems there are divided into plain (lowland) and mountain steppes.

The extent of the steppe zone on the plains of Kazakhstan is sizeable and can be differentiated into the following sub-zones:

- (i) moderate droughty grass-herb steppe on black earth (steppe zone with rich vegetation and cereals);
- (ii) droughty grass-herb steppe on Southern black earth;
- (iii) moderately dry steppe on dark chestnut soils; and
- (iv) dry steppe on chestnut soils and desertified steppe on light chestnut soils.

The first two of these sub-zones occupy 24 million ha or 9% of the country territory. The regions where such ecosystems prevail are the main agricultural regions of Kazakhstan. The ecosystems of moderately dry and dry bunchgrass steppes occupy 76.2 million ha, i.e. 27.8 % of total area and nowadays these areas are mainly ploughed up.

*The desertified steppes* occupy 22 million ha or 8 % of total territory. These areas are widely used as natural meadowlands.

The background of Kazakhstan steppes is very dramatic and complicated due to the so-called “up-turn of virgin lands” (1954-1960), which resulted in anthropogenic transformation of the whole zone. The grass-herb-differ-feather and differ-feather-grass meadows especially have been destroyed by ploughing. 50-60 percent of the dry plain steppe zones covering 52 million ha. have been ploughed up for and 10-15 percent of the hummocks zone. The remaining steppe sites have been greatly modified through overgrazing. Thus the biodiversity losses in these regions are considerable.

*Desert ecosystems* comprise 120.6 million ha, i.e. 44 percent of the total land area. Within the western sector of Asia in Kazakhstan two sub-zonal types of deserts are distinguished: North-Turan - the cold temperate semi-shrub-grass steppe: the cold-temperate semi-shrub-grass steppe (57.3 million ha) on the north and the dwarf semi-shrub and shrub desert (59.7 million ha) in the central and southern regions (South-Turan). The cold-temperate continental North-Turan deserts are typical for the coastal regions of the Caspian and Aral Seas and Lake Balkhash, in Mangyshlak, the Northern Ustyurt, Northern Kyzyl-Kum and Muyun-Kum deserts. Most of these areas are good pasture territories. The warm-temperate continental deserts in Kazakhstan occupy a small territory in the southern part of Ustyurt and the central part of Kyzyl-Kum.

The present-day state of desert vegetation and its biodiversity status varies in different desert ecosystems. In semi-deserts, which are pasture areas the overgrazing is localised around wintering grounds and human settlements. In the central and southern deserts, besides local overgrazing, the damage to biodiversity is related to industrial impacts and the unregulated transport network. The vegetation of sand deserts is the most vulnerable to the human impact and an area of 35 million ha has been disturbed. In recent decades, the Haloxylon desert woodlands have been reduced by more than half.

*Ecosystems of mountains and foothills* cover 12 percent of the total land area of the Republic of Kazakhstan. Mountain ecosystems contain the highest level of biodiversity. In Kazakhstan there are several major groups of mountains. Within the desert zone, two contrasting groups are recognised: Northern Tien-Shan and Western Tien-Shan.

The first one is represented by foothill semi-deserts, which then merge with the steppes. Apple and apricot forests present the rare ecosystems and in lowhills there are also Caucasian carcass [double check tree/forest name, should all be capitalized?] forests. In the higher and humid part of the chain, small-leafy forests occur (aspen, wild-growing fruit trees: apple, apricot); the latter transition into spruce forests (mainly Tien-Shan spruces), shrubs and meadows at higher altitudes. Further uphill, meadows and steppes occur dominated by cryophytes. Nival and subnival belts occupy the large areas at the highest altitude.

The ecosystems of Western Tien-Shan group are found in the Karatau, Karjantau, Ugamsky and Talassky mountains, the foothills of which are occupied by semi-savannah. At higher altitudes, these are replaced by deciduous xerophilous forests, juniper open forests and shrubs. Further up, xerophyte steppes and cryophyte meadows are located which are followed by subnival and nival belts. The rare ecosystem types include pistachio and walnut woodlands as well as the unique rocky ecosystems of Karatau and western Tien-Shan formed by endemic species.

Within the steppe zone, in Altay Mountains, droughty steppes in the foothills and lowhills are followed by boreal dark coniferous forests (fir, spruce and pine) and light larch forests, which are in turn followed by alpine meadows. At some sites, tundra communities occur. The boreal dark coniferous forests, moderate-dry and dry types steppes belong to a rare ecosystem and they are saved only in mountainous conditions.

In the Saur and Tarbagatay Mountains the set of ecological zones is similar to that in Altay, though there is no tundra belt, cryophyte meadows are widely spread, and the forest belt is represented only by light coniferous forests. The ecosystems of particular conservation importance include *Amygdalus ledebouriana* communities in Tarbagatay Mountains.

*Ecosystems of river valleys and lakeshores* occupy 2.7 percent of the total area of Kazakhstan. Willow and poplar hardwoods are found along the rivers in the steppe zone. They alternate with different types of meadow and wetland ecosystems.

In the arid zone of river valleys there are *Populus diversifolia*, *P. pruinosa*, *Eleagnus oxycarpa* and *Salix sp.* Reed beds occupy large areas around lakes. Ash and poplar forests are rare species and need protection status. The strong impact of human activity, including uncontrolled harvesting of hay, over grazing, limiting the flow of rivers by irrigation canals and reservoirs, and ploughing up of flood-lands, leads to the desertification of valley ecosystems.

*Water ecosystems* of the Republic of Kazakhstan are historically ephemeral and they are liable to sizeable variability of salinity and interconnectedness. All river systems are isolated from the seas, except the Ob-Irtysh, which flows to the Arctic. In each isolated basin, an indigenous ichthyofauna has evolved, which is represented by both native species, also by alien species, now adapted to local conditions (except in the basin of the Ural river). There were 13 indigenous species in the basin of Lake Balkhash. When 25 alien species were introduced to the reservoirs a decline in the indigenous ichthyofauna populations was experienced. Those species representative of Turkestani and mountainous Asian fauna are especially threatened, including some endemic invertebrate species in the land-locked lakes of Northern and Eastern Kazakhstan

*The Wetlands* of the Republic of Kazakhstan are the largest waterfowl breeding areas in Asia. The annual numbers of waterfowl nesting in Kazakhstan totals 10 million individuals, 2-3 millions fowl come to Kazakhstan for moulting and 50 million transit the territory during the period of spring and autumn migration, stopping there to replenish their energy resources.

130 species of birds, including 43 commercial fowl, about 20 species of sea fowl (which can considerably affect the fish stocks) and 19 species of exotic and endangered fowl have been recorded. At the present time, the increasing aridity of the climate requires careful planning for water distribution and use. At present, these resources are insufficiently controlled, and this fact is reflected in low hydrological levels of natural water reservoirs. One of the main factors threatening the normal functioning of wetlands, and waterfowl populations is industrial pollution. This avian richness found in the Kazakhstani wetlands represents an enormous ecotourism potential, especially for international bird watchers.

*Forests.* Although the forests in the Republic of Kazakhstan only occupy 11.5 million ha, i.e. 4.2 percent of total territory, nevertheless they are characterised with the greatest concentration of biological diversity. Among the forest areas the desert Haloxylon (*saksaul*) forest is especially important and rare (5 million ha).

According to physical and geographical conditions the forests in the Republic are divided into five groups as follows: highland coniferous, upland wild fruit, desert tugai and plain forests.

Historically, the system of protection, renewal and use of forest resources provided safety for the main forest ecological systems, including the insular pine forests of Kayakh small hills, band pine forests of Irtysh region, coniferous woodland of Saur and Altay, dark coniferous and wild fruity forests of Dzungar Alatau, the mountainous system of Northern Tien-Shan, the remnants of savannah (*Juniperus sabina* L.) forests, broad-leafy and the xerophyte forests of Western Tien-Shan. Reforestation has generated more than 1.3 million ha of forests.

But forest biological diversity remains threatened by many factors, mainly fire, unregulated forestry, excessive grazing, felling for firewood, floods, vermin and disease.

### **Annex 3. Description of the Wild Flora**

The flora of the Republic of Kazakhstan comprises about 6,000 species of higher plants. Of which 14 percent are endemic, including ten monospecific genera.

Botanically, the territory of Kazakhstan may be divided into three steppe regions, two desert zones, and three mountainous areas – Altay, Saur-Tarbagatay and Tien-Shan. The diversity of flora in the steppe and desert zones increases from west to east. The western part of the mountainous areas of Tien-Shan is noted for its high diversity of plants.

As the result of human impact the reduction of growing sites of many species took place. At least 404 species of higher plants are proposed to enter the second edition of the Red Data Book, whereas the first edition of the Red Data Book printed at the beginning of 1980s included 279 higher plants species. At least 20 species are now extinct in Kazakhstan, and more than 40 species are endangered, including the onospecific endemic genera. Invasive aliens pose an increasing threat to natural vegetation, for example, *Spireanthus schrenkianus* forms large populations following human disturbance.

The number of flowering plants in the entertainment and resort sites, in the neighbourhood of large cities and industrial centres, have been dramatically reduced. As the result of uncontrolled exploitation many food plants and herbs are on the verge of disappearance. Relict species of water plants, which not only have historical significance but also practical value are also under threat.

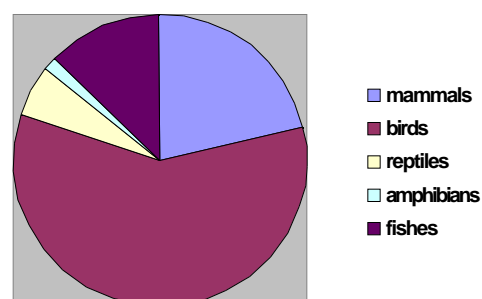
The flora of Kazakhstan includes wild-growing fruit and berry plants, which are characterised by high level of polymorphism and have biologically useful, economically valuable features. In the conditions of intensive human impact there is reduction of genetic diversity of fruit-berry plants due to habitat loss.

From the great number of plants species referred to as endangered, 81 of them, i.e. 20 percent are only protected on the territories of eight zapovedniks (special protected areas) of Kazakhstan. The other endangered and endemic plants are not involved in a protected regime. For instance, there are 3075 species of higher plants in the territory of Southern-Kazakhstan region. There 41 percent of Kazakhstan's endemic plants grow and 118 species from this region entered the Red Data Book. In the only specially protected area (zapovednik) Aksu-Djabagly 1500 species of highest plants are protected and 10 percent of them are included into the Red Data Book. For improving protection of other exotic and endangered species of plants they are planning to create a protected area (zapovednik) in Karatau mountains and a National Park in Western Tien-Shan.

About 500 endangered and exotic species of plants are present in the collections of botanic gardens of the Republic of Kazakhstan. The seeds of 700 rare and useful plant species are being saved in the bank of germplasm in the Institute of Botany and Phyto-introduction of the Academy of Science of the State.

#### Annex 4. Description of the Wild Fauna

The fauna of Kazakhstan amounts to 835 species of vertebrate animals (mammals – 178, birds – 489, reptiles – 49, amphibians – 12, fishes – 107) and about 50 thousand invertebrates (not less





than 10 thousand species of beetles, butterflies and hymenopterans - 5 thousand each). Many invertebrate and vertebrate species are disappearing due to human impact before they are known to science.

The majority of vertebrate species in Kazakhstan are sufficient in numbers for being used as the object of hunting. Among these there are *antelope-saiga* numbering 950-980 thousand, *roe deer* numbering 30 thousand, *wild boar* numbering 10 thousand, *mountain goat* amounting to 20 thousand, and *reindeer-maral* numbering 25 thousand. The *Caspian seal* was the object of hunting for many years, but since 1997 Kazakhstan has forbidden the hunting of this animal because of the cruel methods of hunting.

The high numbers of some beasts like wolfs (more than 100 thousand) and jackals (about 50 thousand) is quite problematic for Kazakhstan, as these beasts cause crucial damage not only to populations of wild hoofed animals but also to the domestic ones and even to people.

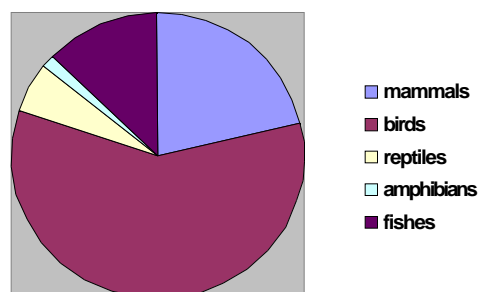
There are 489 species of birds in Kazakhstan, of which 140 species are considered commercial fowl. Approximately 10 million birds nest in Kazakhstan and almost 50 million birds migrate across the national territory. 23 threatened and near-threatened species occur in the country. Bird specialities and spectacular species (particularly attractive to bird watchers) include Himalayan Snowcock, Demoiselle Crane, Ibisbill, Sociable Lapwing, Great Black-headed and Relict Gulls, Pallas' Sandgrouse, Pale-backed Pigeon, White-winged Woodpecker, Turkestan Tit, Crimson-winged Finch, and the Turkestan Ground-Jay (the only endemic species in the region).

Some reptiles have economic value in Kazakhstan, for example, *steppe adder* and *ussurian mamushi* which produce venom. In previous years the Central Asian turtle used for different purposes (till 180 thousand per year) and this resulted in reduction of their numbers.

The sturgeons and other diadromous and semi-diadromous species have most important significance among native fishes of the Caspian Sea in Kazakhstan.

125 species and subspecies of vertebrates (among them are fishes – 16, amphibians – 3, reptiles – 10, birds – 56, mammals – 40) entered the last edition of the Red Data Book of Kazakhstan.

The special protected territories provide safety for 27 percent of species, whereas in conservancy areas 61 percent of endangered mammals and 77 percent of breeding birds included into the Red Data Book are protected. The numbers of reptiles in conservancy areas is very poor – 10 percent. Apparently, it is impossible to find in the protected areas the endemic and rare amphibian



*Ranodon sibiricus*, which is included in the IUCN Red List.

## **Annex 5. Description of Fossils**

In the territory of the Republic of Kazakhstan there are many well-known sites with remnants of the Palaeozoic, Mesozoic, and Cenozoic eras. A great number of well-known representatives, as well as unknown species, kinds and families of fossilised plants and vertebrate animals have been collected and studied. Many Kazakhstan fossil sites are unique. In the southern part of the country there were found the ancient remnants of vascular plants 420 million years old and this is the basis for consideration of this territory as the centre of formation and development of the land flora. In the southeast of Kazakhstan there were found the most ancient Asian vertebrate quadrupeds, which lived about 280 million years ago. In the territory of Karatau Jurassic lake a unique flying lizard with hair cover has been discovered. In the west and north west of the country there are sites with remnants of sea reptiles of the Jurassic and Cretaceous periods; the remnants of Triassic, Jurassic, Cretaceous, Palaeocene, Neocene plants and Cenozoic land mammals. In the north eastern part of the Aral region there are important dinosaur sites. All these findings and other findings of ancient flora and fauna provide answers about the process of change in taxonomic diversity of past plants and animals and also reasons for mass disappearance of some groups and appearance of others.

As the result of human economic activity some places of remnant findings have been lost in Kazakhstan. Other fossil areas are being destroyed as they are used for construction material of stone with remnants of animals and plants, as well as due to construction of roads and urban development.

Evidently, the rich fossil heritage of Kazakhstan is also an important asset for the future development of ecotourism, which to date has unfortunately not been recognised.

## **Annex 6. NBSAP Development Process**

Since July 1996, the Interim Working Group including the scientists and the specialists from various governmental agencies related to biodiversity started to develop the Kazakhstan National Biodiversity Strategy Action Plan (NBSAP). A year later the US\$146,000 GEF/UNDP project on the development of the NBSAP was signed in August 1997. The project was started in September 1997 and was completed in January 1999. Thus, the active phase of the NBSAP development took 16 months in total.

The process of NBSAP development foresees the following stages at the national level:

- Development of the conceptual approach;
- Analysis of the state of biological diversity;
- Discovering of main reasons of extinction of biological diversity;
- Definition of priorities of biodiversity conservation;
- Identification of the strategic actions;
- Action plan development;

- Organization of the discussion by carrying out of seminars, conferences, mass media events, etc.
- The coordination with other projects and programmes;
- Preparation of the final document;
- Expert evaluation; and
- Approval by Government.

Within the framework of development of the National Biodiversity Strategy the following seminars and conferences were carried out:

- Preliminary view on development of the NBSAP - Almaty, March 1996;
- A role of botanical gardens in plant conservation - Almaty, May 1997;
- A role of especially protected natural territories in conservation of biodiversity in Kazakhstan - Kokshetau, October 1997;
- Strengthening of a community role in conservation and sustainable use of biodiversity; development of ecological tourism - Almaty, December 1997;
- Problems of conservation of biological diversity of Kazakhstan and development of the NBSAP - Almaty, January 1998; and
- Presentation of the NBSAP - Kokshetau, January 1999.

A number of difficulties have been met during the development of NBSAP, including:

- Limitation of time. As a rule no more than one year is given for NBSAP development, that obviously is not enough for biodiversity assessment, definition of priorities and discovering of most important actions for implementation of the scheduled plans;
- Incomplete understanding of a problem by representatives from others sectors of economy (agriculture, forestry, public health services, education, economic planning, industry, transport, power etc.), that has caused lack of intersectoral interaction and coordination during preparation of the NBSAP;
- There is an imbalance between of scientific data and political and economic aspects of the strategy;
- Weak development of criteria for estimation of status and trends of national biodiversity;
- An absence of an economic valuation of components of biodiversity;
- Weak involvement of local communities, NGOs, and local authorities in the development and realisation of the Strategy;
- Lack of wide discussion during draft Strategy preparation and weak communication of the process by the mass media;
- The traditional ways of economy management that are not contradicting to interests of conservation of biodiversity are taken into account insufficiently;
- The executors of the projects of the action plan are already nominated without any tenders;
- Development of the action plan was carried out without consistency to the real money provided by the budget and with little involvement from outside of the country; and
- Difficulties with identifying partners and potential donors.

Unfortunately the National Biodiversity Strategy Action Plan produced is not really "National". It was not approved the Government and it remains only an internal document of the Ministry of Natural Resources and Environment Protection.

## **Annex 7. CBD-Related Projects**

The following are CBD-related projects that have been carried out in Kazakhstan:

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| <ul style="list-style-type: none"> <li>• <i>The Framework Ecological Programme for Sustainable Development of the Republic of</i></li> </ul> |
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*Kazakhstan* implemented jointly with the Ministry of Natural Resources and Environment Protection (USD 414 000), and UNDP (USD 102,000). The goal of the programme was the following:

- a. improvement of the capacity of Government of the Republic of Kazakhstan in ecological management including the support in the development of the National Environmental Action Plan for Sustainable Development and accomplishment of the provisions of Conventions concerning environment protection;
- b. support in preparation and implementation of ecological projects in the regions of priority ecological problems;
- c. development of non-governmental organizations for strengthening the public participation in environment protection; and
- d. establishment of adequate national ecological policy for speedup of sustainable development.

• *Improvement of Institutional Capacity of Management and Planning in the Field of Environment protection (World Bank; USD 399,000)*, implemented by the Ministry Natural Resources and Environment Protection in cooperation with other organizations.

• *Project on the Development of the Strategy to implement the Convention on Biological Diversity*, implemented by the Ministry of Natural Resources and Environment Protection (USD 147,000) with the use of the GEF grant of USD 133,000 and UNDP (USD 14,000). The principle elements of the project included:

- 1) the establishment of an inter-sectoral coordination body;
- 2) biodiversity assessment on basis of existing knowledge;
- 3) identification and agreement of options for biodiversity management and benefits sharing in the country through a process of analysis and consultations;
- 4) preparation of a biodiversity strategy and action plan, and;
- 5) preparation and dissemination of the national report to COP.

• *Central Asian Trans-boundary Project on Conservation of Biological Diversity of Western Tien Shan*, the preparatory phase of this project is being completed by the Governments of the Republic of Kazakhstan, the Kyrgyz Republic and the Republic of Uzbekistan with the use of GEF funding (USD 345,000) and Know-How Fund of the Government of UK (USD 240,000). The Council of GEF approved the request of three Central Asian states for grant for USD 10 million for financing the five-year phase of the project implementation starting from the year 2000. This project implementation is aimed at improvement of conservation of biological diversity by the states in the region within the existing and planned protected territories involving local populations into this process. The project envisages the development of a regional Programme of small grants totalling USD 500,000 for the support of the initiatives by non-governmental organizations and local communities in the field of conservation of biological diversity and development of alternative environment-friendly activity.

• *In-situ Conservation of Mountain Agrobiodiversity in Kazakhstan* is a GEF/UNDP PDF B project proposal for USD 188,000. PDF Block A funding was approved during 1999. The project will focus on the development of a public-private partnership in order to build a sustainable, *in-situ* conservation and utilisation programme for Kazakhstan's mountain agrobiodiversity. The full project will combine *in-situ* conservation of crop wild relatives by strengthening management of protected areas and priority habitats with the strengthening of conservation within agricultural systems through developing markets for traditional varieties

and farmer extension work on traditional variety management. The private agricultural industry will be viewed as a source of support for sustainable management of agrobiodiversity resources and innovative linkages between the two will be explored.

• *An Integrated Conservation of Priority Globally Significant Migratory Bird Wetland Habitat*, GEF/UNDP project has been developed by Kazakhstan since 1998. PDF B block (USD 137,000) was approved in 2000. The project has identified opportunities in Kazakhstan for incremental interventions to conserve globally significant wetland habitats. The approach of the resulting full project should be to utilize the opportunities to integrate conservation and development in order to improve the sustainability and effectiveness of priority wetland habitat management. New management tools will be demonstrated to overcome existing barriers to the sustainable conservation and utilization of biological resources in critical globally significant wetland habitat areas.

• *Programme of Small Grants* of UNDP/GEF (more than USD 500,000 since 1997) is aimed at improvement of conservation and sustainable use of biological diversity by local communities, improving their capacity for the use of renewed or power saving energy sources; and enlarging the range of the initiatives supported by GEF at local communities level.

• In 1996, with the support of the Bureau of the Ramsar Convention and Wetlands International, a USD 10,000 project to include Alakol Lake in the Ramsar List was implemented

• *The IUCN Project on Development of the Central Asia Countries Capacity to Implement the Convention on Biological Diversity and Pan-European Biological and Landscape Diversity Strategy* (USD 40,000) was implemented by IUCN members in 1998-99.

In addition to the projects described above, the WWF Russian office, with the participation of Central Asian experts, has prepared reports on the contemporary status of biological diversity in different States and has prepared investment proposals on protection and sustainable use of biodiversity.

## **Annex 8. The Role of Traditional Knowledge of Local Communities in Biodiversity Conservation**

Living in close interaction with nature, the Kazakhs paid attention to the laws of nature and wild spirits, and personified them by magic signs, which they believed forecast fate and explained natural phenomena.

During the autumn-winter period, some part of population hunted for *wolf, fox, korsak fox, hare, polecat, saiga, goitred gazelle, plus – heath-cocks, kekliks, pheasants, Caspian snow-partridge, geese, ducks, . Hunting birds, cheetahs, borzoi dogs - tazy, watchdogs - tobet*, and also different devices, traps, guns have all been using for hunting.

In the summer period, they hunted for *saiga and goitred gazelle*. Light and durable suede trousers and sleeveless jackets - “kokrekshe” were made from the felt. The Kazakhs hunted for *elk, mountain goat - teke, roe deer, wild ram, kulan, maral* for meat, felt and antlers. The fat of hare,

badger, marmot, and bear has been used as medicine. The traditional medicine of Kazakhs has developed through the use of animal and plant products. More than 200 species of plants have been used for treating different human and animal diseases. For example, berries of *archa* (juniper) are used as medicine for Barlow's disease, edema, fever, nervous diseases, rheumatic disease, illnesses of kidneys, urinary bubble, liver, stomach ulcer, and icterus. Tinctures from rind and roots make drinks for arthritis, bronchitis, tuberculosis, and dermal illnesses.

The life of the Kazakh people was closely bound to the natural and animal world. *Shamans-baksya* sewed amulets made from talons of the *golden eagle, eagle-owl and owl, claw of bear, polecat and wolf* on their clothes. The young people (*Dzhigits*) wore the osseous of the racing anchylosis of wolf (*asyk*) around their necks to be protected from the evil eye and spirits. The Kazakhs have respect for the water element, naming him “*su-esi Suleiman*”. Lakes or rivers with many waterfowl, have been considered as a good will signal from Suleiman, who gave energy for life on the Earth.

The Kazakhs tried not to disturb bird's nesting sites ; collection of eggs is very rare, usually only in cases of starvation and in order to prepare the medicine from powdered eggshells. In the Kazakh sagas and fairy tales, the *swan, goose, duck, rudy sheldrake, owl, falcon and gold eagle* have been symbols of kindness and wisdom, and *bald coot, cormorant, pelican* have been symbols of evil, voracity and greediness.

The spring flight of cranes over the *aul* (kazakh settlement) caused great happiness, as the symbol of the winter-end and beginning of the warm period. The old people thanked God that they have survived the difficult times and saw in the spring. At this time, the women took a scoop in their hands and knocked the *yrta* from left to right, saying: “*sut mol, komir as*” - “*a lot of milk, a bite of coal*”. After that they hang the scoop at the right side of the house entrance as a lucky icon.

The spirit of wild nature had great meaning in the life of the Kazakhs, even though they have preached Sunni Islam, and the Mohammedans rites have been mixed with shaman superstition. These superstitions have created an ecological way of thinking and respect for nature.

Today, modern Kazaks are becoming more aware of this traditional knowledge from study of the oral heritage of myths, fairy tales, proverbs, and the animistic attitude to the world. These religions and rites can **support the balance of nature**.

According to Kazakh religion, a snake is considered to be the keeper of wisdom and mystery of the world, therefore if it crawled into the house, the Kazakhs poured milk on its head and set it free. There is a proverb for this case: “*Zhlanga da ak kuyp shygarady*”, that means “the snake has to be taken away with clean thoughts”. It was prohibited to disturb the peace of resting animals, to go for water at night, and if it was necessary to get water, people threw stones into the water three times and then, having got permission from the water host Suleiman, they took water in their bucket. Young girls and women were prohibited to go for water at night.

**Contamination of water by wastes and change the course of the river were considered as a sin.** To cut a living tree was not allowed. Only dead standing trees and dried dung were utilized for heating.

The Kazakhs had a special attitude toward wild animals and birds. **It was prohibited to kill owls, eagle owls, woodpeckers, blue crowns, cuckoos, and martins.** Their nests were never destroyed. Only trained and experienced hunters hunt wild animals. Nesting sites of predatory-birds were strictly protected; and in open places artificial nesting sites were made for them. Raptors were presented to respected guests, sometimes they were exchanged for captured relatives during conflict, and they were often sold at the fairs. At their nesting sites, signs were made - *tamga* (totems) of the tribe which owned these lands. Thieves of hunting birds were strictly punished; sometimes by cutting off the right hand at the wrist.

The Kazakhs **never hunted for ataika** (*ruddy sheldrake*) - “*sarya ala kaz*“. According to legend, once in 1000 years this duck hatches out of its egg a *borzoi dog - tazy*. It was also prohibited to hunt for animals habituating near the saint springs and in holy places. The Kazakhs consider that the spirits of dead people live in these animals. Breakers of these rules were punished with sticks. Whenever Kazakhs slotted or killed animals, they asked for forgiveness from them, saying: “*senin zhazygyn zhok, menin asygyz zhok, besmellya* “ (there is no your guilt, but I have no food, bis'milla). The appealing to the animal for forgiveness was considered to bring its spirit into good mood. It was forbidden to kill solely for entertainment.

The Kazakhs try to choose a dry and sunny place for the construction of the *aul* or settlement, and they tried not to contaminate nearby water sources. The economic constructions and dwellings were built far from the water to give the wild animals an opportunity to go quietly to drink water. While arranging the settlement, every 30-35 days the *yurta* was moved to a new place, and the premises were smoked by *archa* and *garmala (adyraspan)* burnt with sera. Modern science has proved that the incubation period of microbes from dust lasts 40-45 days, and the tents and clothes and its smoking had a beneficial hygienic effect.

Housing was considered to be the holy place of the human habitant and therefore a guest entering the house always welcomed the spirits of the house/hearth - *pershte*. Guests should be given a good meal - a display of hospitality, but also a way to fix lack, wealth at home. A soap, made from the ash and powder (*opa*) of different herbs and *saksaul* have been used as an antibacterial, whilst paints (*enlik*) made from lichens, have been used in cosmetics.

Three types of economy traditionally existed in Kazakhstan: nomadic, semi-nomadic and settled economy, that is hay-mowing and farming of wheat.

The nomadic cattle breeders needed ecological knowledge and skills. Herds of sheep did not exceed 400-500 heads to ensure rationale use of the pastures and protection of soil from erosion.

In the settled *auls* the spring work of farmers, planting cereals (mainly wheat, millet, barley and oats) has to be carried out, . Most cattle are taken away from the pastures, whilst the milk cattle are kept on local grazing land; the winter sheep folds have to be cleaned of manure, which is cut and exposed to air for drying, for use for heating the dwellings in winter time.

For successful economical activity attention must be paid to seasonal events, the arrival and departure of migratory birds, their nesting, the observation of stars in the sky. etc. The location of

the stars, and other phenological observations, which are used by special categories of people (*esepshi*) to forecast what kind of year it would be for the economy.

In May, the heads of the villages (*auls*), families (*clans*) and tribes gather for the annual spring meeting (*kurultai*), where they divide up the land for the summer pastures (*jailau*), based on the number of lambs, whilst the movement patterns, choice of places to be passed through, and other important issues of were also resolved.

Today many of these traditions are already lost, however they should be revived, because alongside with ecological education they promote an increase in ecological consciousness of the population and these traditions could become an important part of ecotourism attractions.

### Annex 9. Brief Description of the Main Protected Areas in Kazakhstan

In the following table, a brief description of the main protected areas in Kazakhstan is provided.

Name of reserve/ Location in oblast/ Total area	Ecosystems and Main Features	Subjects of protection with number of species					
		M	B	R	Am	F	Vasc. Plants
<b>Aksu-Djabagly</b> South-Kazakhstan oblast <b>85 600 ha</b>	Mountains of West Tien Shan. juniper sparse forest; flood-lands forests; bulbs, including tulips. <b>Good accessibility</b>	43	240	9	2	4	1400
<b>Alakolskiy</b> Almaty oblast <b>12 500 ha</b>	Wetlands, lake cost and islands of intermountain desert hollow in the center of Eurasia. <b>Ramsar site.</b> <b>Rather good accessibility</b>	21	98	4	2	20	107
<b>Almatinskiy</b> Almaty oblast <b>73 300 ha</b>	Foothill steppes, fir-groves and alp landscapes of North Tien Shan; wild-apple/wild-apricot groves. <b>Good accessibility</b>	38	200	4	3	3	930
<b>Barsa Kelmes</b> Kzylorda oblast <b>30 000 ha</b>	Island in Aral Sea in the past (peninsula now). Wormwood and salt vegetation and cane. <b>Narrow accessibility</b>	12	202	5	1	1	165
<b>Kurgaldzhinskiy</b> Akmola oblast <b>237 100 ha</b>	Cereals and feather-grass steppes and wet coasts of lakes Kurgaldzhin and Tengiz. Very north nesting of pink flamingo in Eurasia. Ramsar site. <b>Narrow accessibility</b>	37	294	3	2	11	331
<b>Markakolskiy</b> East-Kazakhstan oblast <b>73 400 ha</b>	South-Altai middle mountain fur- groves, silver fur and deciduous forests with fragments of mountain steppes. <b>Narrow accessibility</b>	59	250	4	2	4	2000



<b>Naurzumskiy</b> Kostanai oblast <b>87 700 ha</b>	Dry steppes, sand and clay soil. Wormwood, salt and meadow vegetation. Relict pine forest among dry cereals and feather-grass steppes, salt- and freshwater lakes. <b>Narrow accessibility</b>	30	230	3	3	6	687
<b>Usturtskiy</b> Mangistau oblast <b>223 300 ha</b>	Desert landscapes of south Turan lowland and plateau Usturt. <b>Narrow accessibility</b>	27	111	30	-	-	300
<b>Zapadno-Altayskiy</b> East-Kazakhstan oblast <b>56 100 ha</b>	Middle mountains with silver-fur and fur-groves' taiga, alp and tundra of West Altai. <b>Good accessibility</b>	28	108	1	4	14	145
<b>Altyn Emel NP</b> Almaty oblast <b>209 000 ha</b>	Mountain ecosystems; sandy, loamy and stony deserts; flood- lands forests and wetlands. Natural and cultural monuments. <b>Types of activity:</b> tourism and recreation including hunt and fishing. <b>Rather good accessibility</b>						
<b>Bayanaulskiy NP</b> Pavlodar oblast <b>50 700 ha</b>	Upland steppes, picturesque rocks; azonal pine tree and birch forests in dry steppes, lakes. <b>Types of activity:</b> recreation, tourism, and ecological education. <b>Rather good accessibility</b>						
<b>Burabai NP</b> Akmola oblast <b>84 100 ha</b>	Upland steppes, picturesque rocks; Pine tree forests on rocks, birch groves, lakes. <b>Types of activity:</b> recreation, treatment, tourism, fishing and ecological education <b>Good accessibility</b>						
<b>Ile-Alatauskiy NP</b> Almaty oblast <b>181 800 ha</b>	Created for protection of unique landscapes of north slope of North TienShan. The main objects of protection: fir-groves, apple- and apricot forests, wildlife. <b>Types of activity:</b> recreation, tourism, mountaineering and sport. <b>Good accessibility</b>						
<b>Karkaralinskiy NP</b> Karaganda oblast <b>90 400 ha</b>	Upland steppes, picturesque rocks; Pine tree forests on rocks, birch groves, lakes. <b>Types of activity:</b> recreation, tourism and hunting. <b>Rather good accessibility</b>						
<b>Kokshetau NP</b> Akmola oblast <b>135 800 ha</b>	Steppes, scattered pine and birch forests; lakes. <b>Types of activity:</b> recreation, tourism, fishing and hunting. <b>Rather good accessibility</b>						

Abbreviations: **M** - mammals; **B** - birds; **R** - reptiles; **Am** - amphibians; **F** - fishes; **Vasc. Plants** - vascular plants; **NP** - national parks.

## Annex 10. Aksu-Djabagly Project Case Study: Objectives and Prescriptions

In the following table, a brief description of the main objectives and prescriptions of the Aksu-Djabagly Project Case Study is provided.

Code	Prescription
<b>AD 1</b>	<b>To evaluate the significance of biodiversity at international, regional and national levels through additional collection and evaluation of information on the communities and species of plants and animals in the zapovednik and surrounding areas.</b>
AD 1.1	Compile an inventory of the biodiversity (especially lower plants and invertebrates) of the zapovednik and its surroundings.
AD 1.2	Carry out an evaluation of the significance of the biodiversity in the zapovednik and surrounding area, including levels of endemism and threats, and representativeness for Kazakhstan and the West Tien Shan.
AD 1.3	Conduct an assessment of economically useful, traditionally used, and wild relatives of cultivated plants and animals according to their rarity and potential for future use.
<b>AD 2</b>	<b>To maintain monitor, protect and where necessary enhance the representative and endangered natural communities of plants and animals of the zapovednik and surrounding areas.</b>
AD 2.1	Conduct land use surveys and assessments to identify land use conflicts and implement actions to ameliorate them.
AD 2.2	Identify and legally protect natural monuments, forest patches, and other types of protected area, without withdrawing agricultural land.
AD 2.3	Produce business plans for the zapovednik, surrounding areas and associated activities.
AD 2.4	Create nurseries and plantations of appropriate forest trees to supply the region with saplings and timber.
AD 2.5	Produce a genetic inventory of autochthonic and relict taxa of plants and animals of the Kazakhstan part of the West Tien Shan, including juniper, fruit and walnut forests.
<b>AD 3</b>	<b>To maintain, monitor and enhance the diversity and composition of populations of rare, endemic, important and relict plant and animal species within the zapovednik, adjacent leshozs and surrounding areas.</b>
AD 3.1	Develop and implement an assessment and monitoring programme for rare, endangered, relict and endemic species of plants and animals.
AD 3.2	Improve existing protection measures and develop new measures (including designating new sites) for rare, endangered, relict and endemic species of animals based upon the results of the monitoring, especially for wild sheep and Menzbirs marmot.
AD 3.3	Improve existing protection measures and develop new measures (including designating new sites) for rare, endangered, relict and endemic species of plants based upon the results of the monitoring.
AD 3.4	Improve public awareness about rare species of plants and animals, including the creation of a demonstration site in the zapovednik.
AD 3.5	Study the past and current condition and biology of populations of rare and threatened species of plants and animals to determine reasons for their decline in the zapovednik and surrounding areas.
<b>AD 4</b>	<b>To maintain and rationally use the unique and attractive landscape sites of the Zapovednik and surrounding areas, and where possible realise the high recreation potential of the area.</b>
AD 4.1	Assess, monitor and implement measures to conserve sites of interest (including: Mashat, Irsu, Karaungur and Burguluk canyons, Ugam upper river valley, Maidantal river valley, and the lakes of upper Sairamsu river).
AD 4.2	Identify the recreation requirements of visitors and tourists, through participatory appraisal by all stakeholders.
AD 4.3	Identify existing and sustainable recreation pressures on sites of interest and actions to regulate them.

AD 4.4	Identify the legal status of sites of interest and the legislative implications of the actions required to achieve the objective.
AD 4.5	Implement a programme to improve the sites, based upon the outputs of the previous prescriptions (including: ecological trails, viewing points, equipment, bridges across rivers and streams, training, etc.)
AD 4.6	Arrange competitive tenders for projects on the creation and development of infrastructure for tourism and recreation activities and control the implementation of these projects.
AD 4.7	Development of ecotourism museum displays and training for ecotourism specialists.
<b>AD 5</b>	<b>To protect and carefully use unique palaeontological, historical and ethno-cultural sites.</b>
AD 5.1	Build an inventory of Jurassic flora and fauna; including surveying, mapping, and assessment of key sites.
AD 5.2	Create new palaeontological protected areas within the zapovednik and extend protection in other key areas (including Auliye, Chokiye, Chugurchak and Karabastau) and build new guard posts.
AD 5.3	Build an inventory and identify new sites of historical and ethno-cultural importance and implement activities to protect them.
<b>AD 6</b>	<b>To support local community initiatives for sustainable socio-economic development of the area, within the objectives of the project.</b>
AD 6.1	Facilitate local populations to identify their needs and priorities for the zapovednik and surrounding areas.
AD 6.2	Support local initiatives that promote sustainable development through a small grants programme.
AD 6.3	Support local initiatives that promote the use of renewable or more effective sources of energy.
AD 6.4	Set up and support an information and advisory centre, in close contact with marketing rayon department, to assist the population of Tyulkubas and Tolebe rayon with sustainable use and conservation of natural resources.
AD 6.5	Develop zapovednik and rayon symbols and trademarks for use in advertising the zapovednik and products resulting from the project, and to attract financial support.
<b>AD 7</b>	<b>To reduce pollution within the reserve and surrounding areas.</b>
AD 7.1	Develop and support a legal framework and ensure support of local authorities for penalties imposed for environmental pollution to buy and install industrial dust and gas filtering equipment.
AD 7.2	Implement activities to reduce pollution in key sites that are most affected and important for biodiversity conservation.
<b>AD 8</b>	<b>To increase the level of public awareness and ecological education about nature conservation and the project, of the local population.</b>
AD 8.1	Organise and hold workshops on environmental issues for the public, local administration, nature conservation institutions and journalists at local, national, regional and international levels with the participation of international experts.
AD 8.2	Hold a competition for the best media articles (including photos, drawings, articles and videos) on environmental issues linked to the project.
AD 8.3	Provide financial and technical support to the development and implementation of ecological TV and radio programmes.
AD 8.4	Publish guidebooks about the zapovednik and surrounding areas.
AD 8.5	Establish an educational ecological programmes for kindergarten, schools and colleges, including practical work, teacher training and competitions.
AD 8.6	Establish and support a mobile education and public awareness unit.
<b>AD 9</b>	<b>To draw attention to and increase the involvement of state and non-governmental organisations in the implementation of the project.</b>
AD 9.1	Design, publish and disseminate training and methodological manuals and new forms of education materials on biodiversity and use of zapovedniks for educational purposes for use by state and non-government organisations.
AD 9.2	Hold a series of training and network building workshops on ecological education for trainers, women, the enforcement institutions, NGO's and other administrative authorities.
AD 9.3	Set up a training, advisory and resource centre for environmental education and interpretation.
<b>AD 10</b>	<b>To develop the infrastructure and the staff structure of the Zapovednik to protect and study the biodiversity of the Zapovednik and surrounding areas and to meet the objectives of the project</b>

AD 10.1	Improve the basic material and technical infrastructure to maintain the sustainable development of the zapovednik, including production facilities in line with project objectives.
AD 10.2	Optimise human and technical resources in the zapovednik, through; training and re-training; management re-structuring; additional staff positions; developing biodiversity monitoring infrastructure, and; incorporating international experience.
AD 10.3	Strengthen protection against fires, including conducting aerial patrols; providing key sites with fire-prevention equipment; and improving the technical base for fire prevention.
<b>AD 11</b>	<b>To provide a protective regime for the reserve buffer zone and to extend the influence of the regime to a regional level.</b>
AD 11.1	Create and support a non-government inspection group for nature protection in the zapovednik and surrounding areas.
AD 11.2	Develop and implement the legal framework for the protected area and its boundaries.
AD 11.3	Organise collaborative and co-ordinating training, work and meetings between zapovedniks, leshoz's, and enforcement institutions.
AD 11.4	Support zapovednik specialists to participate in environmental activities at the regional and oblast level.
<b>AD 12</b>	<b>To disseminate and publish the results and materials from research, monitoring and other project activities</b>
AD 12.1	Publish and disseminate the results of scientific research in a series of 'Aksu Djabagly Transactions' and other transactions.
AD 12.2	Prepare and publish practical manuals, cartographic materials, brochures and leaflets about the rational use of natural resources in the region, based upon the research conducted in the zapovednik and by other organisations.
AD 12.3	Support publishing and dissemination of materials and co-ordinate with regional activities.
<b>AD 13</b>	<b>To realise the high recreation potential of the area, within the objectives of the project</b>
AD 13.1	Arrange competitive tenders for projects on the creation and development of infrastructure for tourism and recreation activities and control the implementation of these projects.
AD 13.2	Development of ecotourism museum displays and training for ecotourism specialists.
<b>AD 14</b>	<b>To promote and support the improvement and implementation of the environmental legislation at a local and national level.</b>
	No site specific prescriptions.
<b>AD 15</b>	<b>Continue to carry out and improve day to day management of the Zapovednik and the surrounding areas to benefit biodiversity, whilst meeting legal obligations</b>
AD 15.1	Carry out day to day management of the Zapovednik and surrounding areas including warden patrols, research and maintenance.
AD 15.2	Review, develop and integrate operational management through the annual work plans within the project area to ensure they are compatible within the project area