Interstate Committee on Sustainable Development of Central Asia

CENTRAL ASIA:

PROGRESS REVIEW IN REALIZATION OF THE AGENDA 21

Prepared by the Regional Environmental Centre for Central Asia

Àlmaty, 2001

CONTENTS

PREFACE

Central Asia occupies a unique place on a geographical map of the world. Being located in the center of Eurasia continent, it is, literally and figuratively, located on the crossing of axis "North-South" and "West-East". This peculiarity of geographical location has its influence on cultural, political, economical, social, and ecological life of the region.

Acquisition of state independence by CAR countries in 1991 happed just a year before the Global Summit in Rio-de-Janeiro. To-date, CAR states are celebrating 10th anniversary of their independence and it is very symbolical that the current report reflects those deep and radical changes in area of environment and development, which happened in those countries.

Decision of 55th UN General Assembly about conducting the World Summit on sustainable development in 2002 in Johannesburg, at the level of country leaders and governments of the world is very topical for the regional community since it allows to draw conclusions of the past 10 years and to pinpoint goal and objectives for the nearest future..

The current report has been prepared by The Regional Environmental Center for Central Asia in collaboration with sustainable development experts and is a survey of progress made in CAR in reaching sustainable development goals for the past 10 years. The report is not intended to repeat national reports, rather it shows activities conducted at the regional level with reflection of specifics of each country and the region as a whole.

The report uses official quantitative data, country and international organizations reports, materials prepared by the regional working group with the help of UNEP/GRIDA and experts of sustainable development network ICSD with support of UNDP Development of Aral Basin Potential, as well as recommendations and materials of Famous Person Forum held at the end of August this year in the Republic of Kazakhstan (Round Table), Bishkek.

List of used sources is attached at the end of the report.

Distributing the report is encouraged, references are mandatory.

I. GENERAL INFORMATION ON CENTRAL ASIA

New Independent States of CAR, acquired independence in 1991: the Republic of Kazakhstan, Kyrgyz Republic, Republic Tajikistan, Turkmenistan, and Republic Uzbekistan, all of which border with Russian

Federation, China, Afghanistan, and Iran. General square of the regional territory is about 3882 thousand square km, with population more than 53 million people.

From the earliest times, the Great Silk Road, connecting countries of East with European countries, has played the role of cultural, trade-economic transcontinental link. Ancient culture, woven of traditions and customs of many peoples, formed colorful modern face of CAR.

Dependence of the CAR development on water and land resources can be traced back to ancient times. The life foundation here has always been land cultivation and cattle breeding, and water has been the main restrictive factor. The beginning of active irrigated land cultivation in the region dates back to VI-VII centuries B.C. and coincides with the highest prosperity of ancient civilization, where irrigation has always been the main decisive factor of historical and social-economical development.

By the end of XIX, there were some 7-8 million people in the region. Irrigated land amounted to about 3.4 million hectares and was equipped by an irrigation network. To-date, the regional population has increased by 7 times, and irrigated areas have broadened twice—up to 7.5—7.7 million hectares.

CAR countries are in a single ecological space of Aral Basin. The regional ecosystems are very sensitive to anthropogenic influences in connection with arid conditions. Extensive method of household operation in previous years has contributed to appearance of numerous regional ecological problems, to include one of the biggest ecological disasters of the Planet - Aral Sea tragedy.

Caspian Sea - one of the world's biggest inland basin with large resources of hydrocarbon material. Its shores are occupied by two CAR countries - Kazakhstan and Turkmenistan. Flood of seashore areas, including areas of oil drilling, leads to washing out oil byproducts, industrial and community sewerages into the sea, which poses a threat to biodiversity and preservation of Caspian Sea ecosystem. Daily catch of Caspian sturgeon has sharply decreased from dozens thousand tons to dozens tons.

Sharp contrast between mountain ridges covered by permanent snows and bordering with them vast deserts are the salient feature of the regional nature. For CAR countries, mountains have a special meaning. The main part of water and hydropower resources is formed here. Precipitations of cold season, accumulated in glaciers play a crucial role in formation of a favorable, in terms of household keeping, hydrologic regime, especially during droughty years. Mountain streams are one of the main sources of renewable resources of pure water for the whole region.

Problems of natural disasters such as earthquakes, landslides, avalanches, mudflows, and floods are part and parcel of being located close to mountains. Directly or indirectly, these disasters influence life conditions of densely populated river valleys.

Variety of landscapes has made for richness in flora and fauna of the region. Unique types inhibit this area: mammals (snow leopard, moufflon, beaver, otter, koulan, Caspian seal, and other), birds (pink flamingo, pink pelican, fish-hawk, ibis, peregrine, golden eagle, relict mew, black stork, etc.), fish (sturgeon types of Ural-Caspian region, numerous types of lake and river fish). The region lays on the way of seasoning mammals' migration. It serves as a place of reproduction, nesting, and resting for over 300 types of migrating birds.

Extensive usage of natural resources, pollution of air, water and soil reduce ecological space, limiting opportunities of social-economic development of the region and creating sustainable living environment. **Countries have faced an issue of development and conducting a coordinated complex of action to resolve development problems.**

II. SOCIAL – ECONOMIC ASPECTS

1. Social protection of population, fight against poverty

Last period in the Central Asian countries was characterized by a deep crisis, followed by worsening of important social indices. Among the most important problems there are poverty in the rural area, population growth and high level of disease incidence.

Population growth is one of the main reasons of reducing sources of existence in the CAR region. Annual population growth in Kyrgystan is 1.5%, in Tajikistan – 2.5%, in Turkmenistan – 2.4%, in Uzbekistan – 2.3%. Along with that, the reduction in population in Kazakhstan is due to drop in population birth-rate and migration. Between 1991 and 1998, the birth-rate in the country fell from 21,5 to 14,4 per 1000 people.

The typical tendency for these countries is relocation of rural population to urban areas. A new term appeared - "ecological refugees". But even in cities poor people tend to live closer to polluted areas, plants, and busy highways. There is a growth in external migration of population.

Nowadays in the CAR countries demographic programs and objectives are hardly present, there is no assessment on future resources influence. Demographic programs must become a larger part of the policy that deals with such factors as health of ecological systems, technology of housing people and access to resources.

Recommendations:

- *to design national and regional programs and strategy on population as a part of development programs;*
- *to ensure wide access of rural population to the reproduction health services;*
- *to begin scientific research in the demography area..*

There are indices of human development (IHD) and poverty (IP-2) and others that prove the difficult situation in the social sphere of CAR countries.

Differentiation of CAR countries regarding the level of human development is determined by the difference in GDP per capita. There was a decrease in human development index on average by 5 % accompanied by the fall of GDP in all countries from the beginning of the reforms till mid 90s. By the end of decade IHD began to grow as the economy was revived. Along with that, there was a worrying tendency of reduction in the expected life span – a component of the Index with low "weigh", but a very important one from the development point of view. Educational part of the Index remains stable thanks to high level of literacy of population. However the closure of kindergartens, low salary level of teachers, low attendance of educational establishments are a reason to worry.

Poverty is a general problem and a priority of all developing countries of Central Asia. According to the data from the Global Development Report, in 1999 over 40% of Central Asia population were beyond the poverty level. This index is fluctuating in the region from 4% in Turkmenistan up to 83% in Tajikistan.

Gini index, that shows the discrepancy in earning for rich and poor and characterizes the social stratification of the society, stays very high and amounts to about 0,350. There is a growing gap in earnings between have's and have-nots. For example, in Kazakhstan before the transition period there was a 4 times gap in earning between the very rich 10% of population and very poor 10% of population. In 1998 this difference was exceeded more than 10 times (11.3). Ten per cent of the very rich population were earning 27% of all income whereas 10% of the very poor population were earning 2.3%.

A high level of poverty is caused, first of all, by social-economic factors such as unemployment and low purchasing power of population that are caused by low income and high cost of goods and services, population was not ready for introduced market economic conditions and therefore took limited part in initiated reforms. It is known that poor layers of population suffer most from ecological disasters in comparison to affluent representative of population.

Poverty alleviation is one of the main goals of social policies, conducted by governments of the region today. They take measures to countervail incomes between urban and rural population, implement rural reforms, carry out an employment and creating new jobs program, develop rural infrastructures, assist in developing SME (Uzbekistan), carry out Programs and Strategies to reduce

poverty and unemployment (Kazakhstan, Kyrgystan). In Turkmenistan, utilities payments, including electricity, gas, water, etc., are canceled. Public transportation fares are on preferential terms.

However, poverty level in the region remains one of the highest in Asia. Thereupon, raising living standards and creating new jobs are fundamental principles for poverty reduction in the region. Considerable influence on population employment is brought by external factors connected with regional dependence on the world economy and an external debt. Restructuring the external debt for poverty reduction and for ecological programs could considerable contribute to the countries of the region.

Recommendations:

- *Develop (where apply) and start implementing National Strategies to reduce poverty as a part of general development strategies with close coordination with ecological programs;*
- *Provide access to resources and decision making for local population, women, youth;*
- *Organize Social Adaptation and Professional Retraining Centers, develop and support SME, traditional trade by way of creating mechanisms of privilege crediting and taxation;*
- *Region Development Models should develop, but not destroy, an individual and organizational values of integrity and conception of responsibilities differentiation;*
- *Further national and general measures and policy, intended to internalize social expenses and expenses for environment protection, should be strengthened by a just world economic and trade system which meets needs of countries rich in natural and human resources and able to create markets for global environmental services;*
- *Johannesburg Summit should agree on a process which could lead to a global scheme of restructuring a foreign debt. It should include aspects connected with debt exchanges to reduce poverty and to launch new environmental programs.*

Salient characteristics of labor market in CAR over recent years are high a level of unemployed (along with decrease in level of registered unemployed), intensive internal migration (between branches and sectors of economy), and very imperceptible external migration of labor. A share of economic active population and employed ones in economy in 1999 made up 89% - 98%, unemployed ratio calculated in conformity with **MOT** approach ranges from 2% in Uzbekistan, 5-8% in Kyrgystan and Tajikistan, to 11% in Kazakhstan.

A low level of social protection of vulnerable population groups and a remaining difficult status of women, youth, and elders are common for countries of the region. Women seeking for job with the help of unemployment agencies amounted to 53% in Kyrgystan and Tajikistan, 60-64% in Kazakhstan and Uzbekistan by the end of 1999. At the same time, poor families have more kids.

Each year the situation with fresh drinkable water in the region gets worse. This problem is especially vital for Kazakhstan, where 25% of population (approximately 4 million people) do not get tap water to include 16.5% who use water from open ponds and 3.2% who use drinkable water of poor quality. Most plumbing were put into operation or were last repaired more than 20-25 years ago. It is not uncommon that residents of rural areas do not have plumbing at all—in Kyrgystan there are 40% of those. Problem of supplying fresh water of standard quality and of sufficient amount to the region remains unsolved, which results in increase of disease rate among population.

Poor access to means of living along with deteriorating ecological situation contributes to an increase of a disease and death rate among population. From 1990 to 1999, the death rate in the region increased by 12-18%. In spite of decrease tendency, the rate of infantile death remains the highest among NIS countries. In 1997, infantile death ratio ranged between 37 out of 1000 in Kazakhstan up to 57 in Turkmenistan. Main reasons are diseases of system of blood circulation, neoplasm, and problems with breathing organs. A number of deaths from tuberculoses have doubled in Kazakhstan in comparison to 1990. An increase in the death rate is, up to some extent, the result of population aging. Higher death rate among male population keeps growing. AIDS is also a growing threat in the region and is largely due to drug use.

Majority of CAR countries (Kazakhstan, Kyrgystan, Tajikistan, Uzbekistan) have developed National Environment Hygiene Plans but the latter did not get any priority among other programs and did not become a part of general development strategies.

Recommendations:

In order to protect and improve people's health

- *Carry out National plans for environment hygiene actions; include them into general development strategies, and develop a regional plan on common-shared problems of the region based on them;*
- *Improve medical services and medical infrastructure, create national services capable to control and prevent diseases;*
- *Make sure poor population have access to heath care system;*
- *Improve services dealing with family planning and provide medical services for children to include vaccination, feed;*
- *Create local systems which satisfy basic needs of population in fresh water, healthy food, and sanitation;*

Establish effective regional collaboration to solve problems with drugs and epidemics;

2. Economical activity

With acquiring independence, states of the Central Asia have put their effort to improve their economic independence. Restrictive monetary-credit and budget policy liberalization of external economic activity, restructure of property, and development of entrepreneurship have become components of economic reforms.

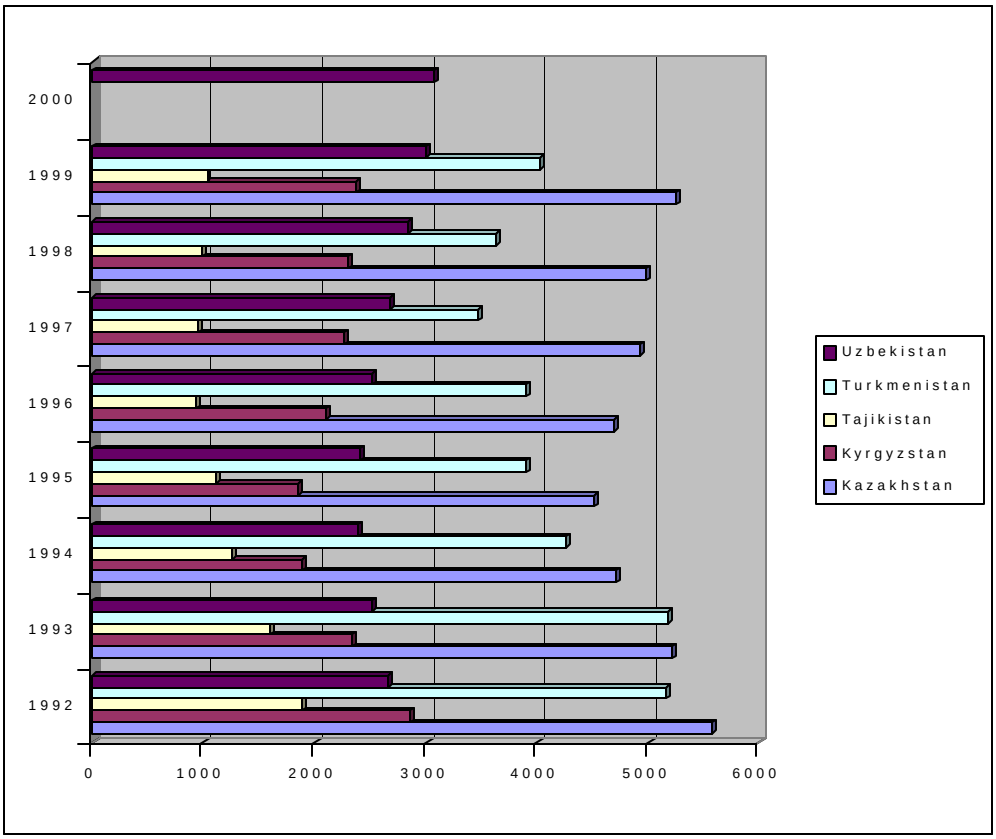
The region has vast resources of hydrocarbon material and minerals. Economy of CAR countries is in transitional period which has different peculiarities in each country. Crest of economic crisis and its decrease happened in different years but within the same time period: between 1991 and 1995. Economies started to stabilize from 1996.

Social economic reforms in the region were carried out inconsistently, with some positive changes happened in 1992-1999 in society and economy, and a number of negative social-economic consequences of market transformation. Main macroeconomic indices of the last years prove this.

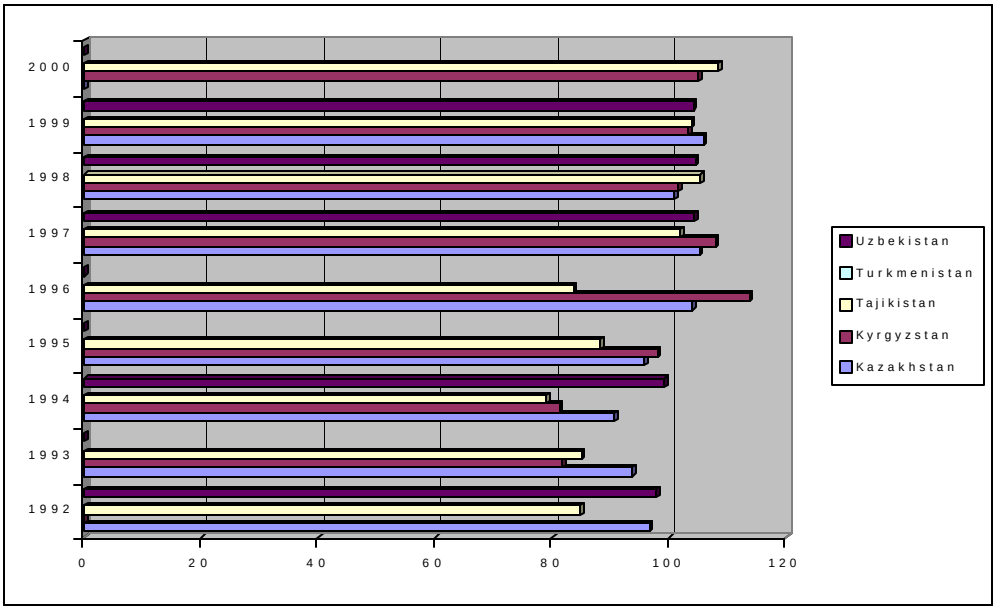
Year 1996 was marked by an increase of Gross Domestic Product throughout the region. This tendency still remains. The fastest rates of economical growth in 1999 were noted in Uzbekistan (104.4%), Kyrgystan and Tajikistan (103.6%), Kazakhstan (101.7%). Volumes of GDP per capita in 1999 with respect to 1996 grew: in Kyrgystan by 11%, in Uzbekistan by 9%, in Tajikistan by 7%, and in Kazakhstan by 6%. However, in comparison to 1990 there was a decrease of real GDP in all countries of the region. The worst recession was in Tajikistan by 2.2 times, the least in Uzbekistan by 1.1 times.

In 1999, average volume of GDP per capita at consumer purchasing power parity in 1999 made up, on average, US$5.000 throughout NIS or 21% to that of the USA. In CAR this index was highest in Kazakhstan—5.250 thousand US dollars or 22% to that of the USA. The lowest index was in Tajikistan—1.03 thousand US dollars (4%). In Turkmenistan, Uzbekistan, and Kyrgystan—this index amounted to 3.63, 2.37, and 2.99 thousand US dollars or accordingly 14.8, 12.2, and 9% to that of the USA.

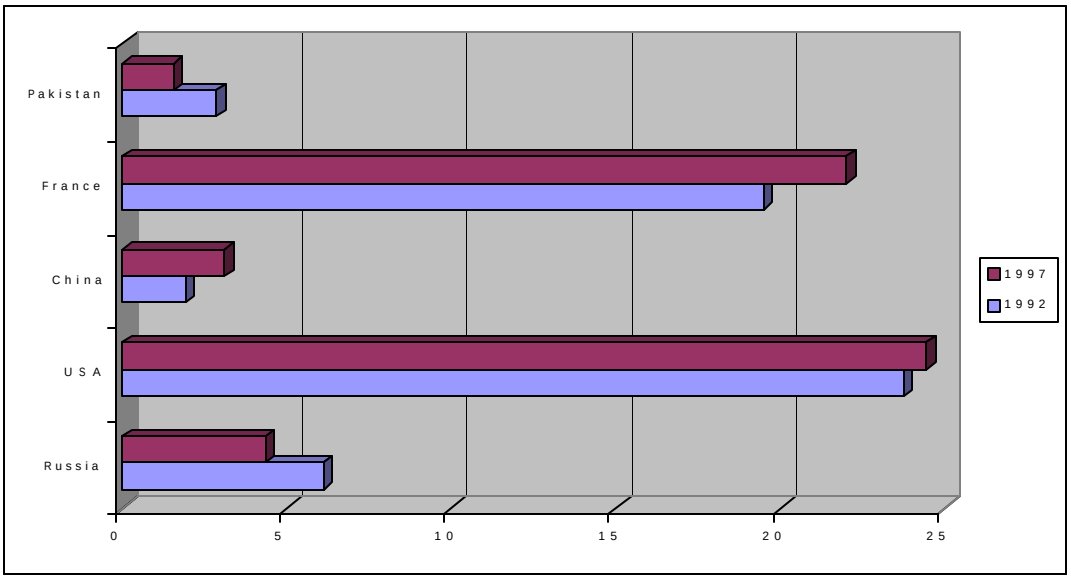
GDP per capita at consumer purchasing power parity, USD



Rate of growth of GDP, in % to the previous year



International comparison
Real GDP per capita (in USD at par consumer purchasing power)



Tendencies in economy branch development differ in the countries. In 1999 in comparison to 1998 industrial level of production increased in all countries of CAR except Kyrgyzstan (98.3% of 1998 level). The fastest rate of growth was in Uzbekistan (6.1%), the slowest (2.2%), with average 7% throughout NIS.

In agro-industrial complex of CAR countries there was some growth for the last 2 years. If in NIS agricultural production increased by 2%, in Kazakhstan it did by 29%, in Kyrgystan by 9%, in Tajikistan by 4%. Structure of sowing crops changes as well—Turkmenistan broadened its land for cereals, Uzbekistan—for melons and gourds and vegetables. Stable growth of chief types of livestock production was noted in Kyrgystan and Uzbekistan.

In comparison to 1996, volume of goods transportation (excluding pipeline) increased by 2% throughout CAR. Investment ratio within GDP structure ranges between 9.1 in Tajikistan and 19.5 in Kazakhstan. At that time, equipment deterioration reached 40% and more. Investment ratio of house-building reduced by 2-3 times in CAR countries in comparison to 1990. In 1999, a foreign investment share in GDP reached the following percentage: 11% in Kazakhstan, 18% in Kyrgystan, 24% in Uzbekistan, 9.1% in Tajikistan, 39.71% in Turkmenistan.

Financial area remains complicated and least stable. The reason of financial instability for majority of countries is due to low tax collection, non-optimal expenditure structure, internal and external debts. Despite the reduction of budget deficit, many countries have not overcome budget crisis concerned with chronic non-payments and internal debt growth.

After the crisis of 1998 there was a devaluation of national currencies practically in all countries of Central Asian Region (CAP). By the end of 1999 the rate of Kazakhstan national currency dropped by 64,9%, of Kyrgyzstan currency by 54,6% and of Tajikistan by 27,3%. On one hand it caused a new wave of inflation, denominated bankroll of the population and diminished its purchasing power and on the other hand it stimulated the growth of export-oriented industries, limited import, and facilitated the increasing demand for locally produced goods from manufacturers and consumers.

In general, the following features characterize the economy of CAR countries during-1990 – 1999:

- reduction of real GDP (Gross Domestic Product) in comparison with the level of 1990
- cutback in investment activity including disinvestment
- growing dependency of CAR countries on the world market price fluctuation for raw materials that constitute the basis of export
- a large part of manufacturing potential is worn-out, deteriorating quality of potentials of scientific, technical and human resources of CAR countries
- growing state expenses to repay the country debt
- devaluation of national currencies
- relatively low effectiveness of industrial and agricultural production

- tendencies of stabilization of export-oriented industrial branches

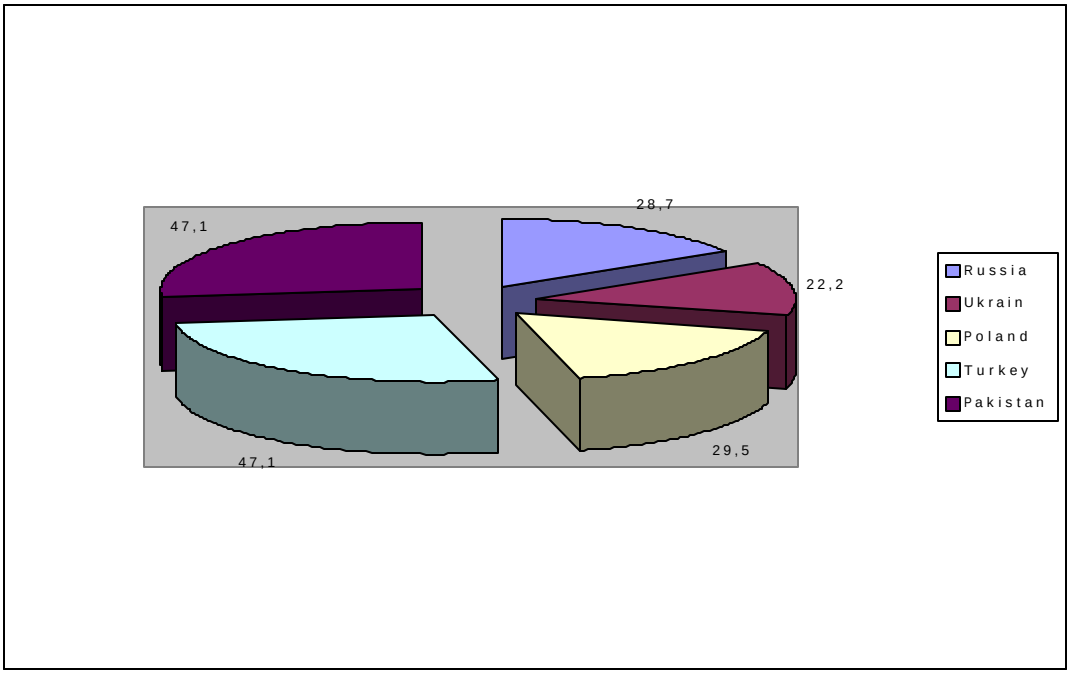
For the last few years, as mentioned above, in Central Asian Region there are tendencies of macroeconomic stabilization, but budget deficit and high country debt still remain. In Kyrgyzstan during 1994-2000 the country debt increased in 3.6 times and made up 137% of GDP. The situation is the same in Kazakhstan – the debt increased in 1.8 times and made up 49,4% of GDP. The situation in Tajikistan is slightly different. In this country the external debt has a tendency to decrease; for the same period it decreased by 1.5 times, but the amount of debt remains very high – 53.4% of GDP.

National statistical data, debt in % from GDP

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan	
1992	24,5	-	-			Budget Deficit in % from GDP
1993	33,4	-	10,3			-
1994	28,0	38,6	83,5			-
1995	21,0	31,1	113,5			2,8
1996	20,1	66,6				1,9
1997	26,9	79,5	99,6		11,7	2,4
1998	36,0	91,7	75.7			2,1
1999	49,4	132,6	53,4			1,8
2000	-	137,2	-			

*- Human development Report, p.194

International comparisons: Debt in % to GDP (1997)



The structure of consumption. One of the most serious problems is the unbalanced structure of consumption. The level of energy consumption per capita in CAR countries is 2-4 times less than in Europe and USA. At the same time, the energy consuming industrial production of the region exceeds its analogues in Europe by 2-3 times.

A high share of transit consumption in manufacturing (from 5% of GDP in Kazakhstan and up to 15 % in Uzbekistan) presupposes an excessive use of natural resources. The share of natural raw material branches in the structure of GDP continues to grow. In Kazakhstan it increased in 2.8 times during 1992-1999. In rural regions the lack and reduction of natural resources (forests, water, soils and pastures) strengthened the growth of social tension. Here, the impoverished layers of population suffer

most of desertification, floods and famine that are conditioned by the climate changes as well. They have to spend more efforts in searching for water and firewood and suffer from soil fertility decrease.

Recommendations

In order to change the structures of consumption:

- *reduce the share of raw materials intensive, energy consuming and mining industries*
- *use the expertise of centres with clean industries to introduce technologies facilitating the reduction in materials and power consuming industries, to request assistance of developed countries in acquiring ecologically friendly technologies;*
- *expand the practice of writing ecological information and marking it on goods labels and placing additional notices informing people about the influence of goods on their health and environment;*
- *encourage the use of economic instruments, such as ecological taxes, systems of collateral and repayments*
-

3. Interrelations between the state of environment and economic development

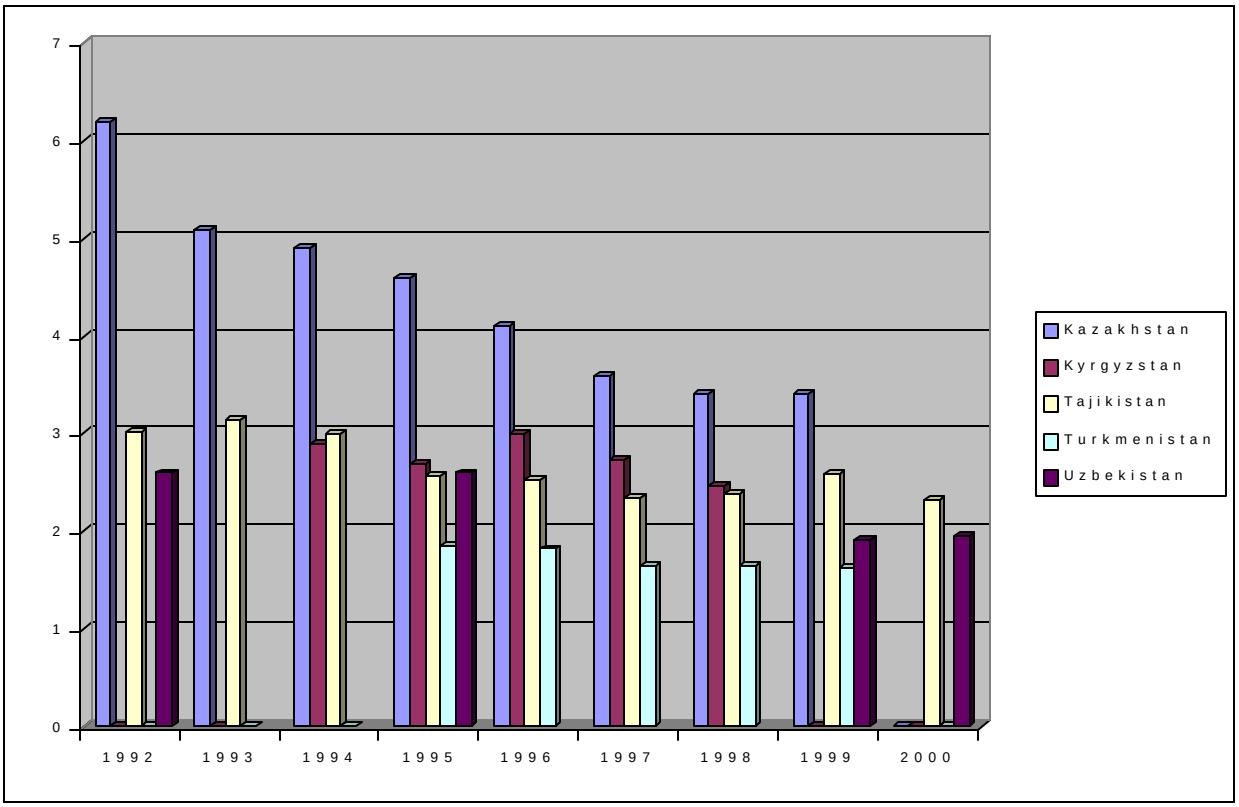
The analysis shows that main reasons of negative influence of economic activity on environment, domination of capital consuming and ecologically damaging, raw materials and energy consuming industries are as follows:

1. Inadequacy of current market economy and natural characteristics of biosphere and its limited abilities regarding extraction of natural resources and contamination;
2. Discrepancy between ecological and economic interests; ignoring the ecological factor in the main economic indices and inefficiency of economic stimuli for environment protection;
3. Defects of management system that creates barriers for integration of ecological and economic activity.

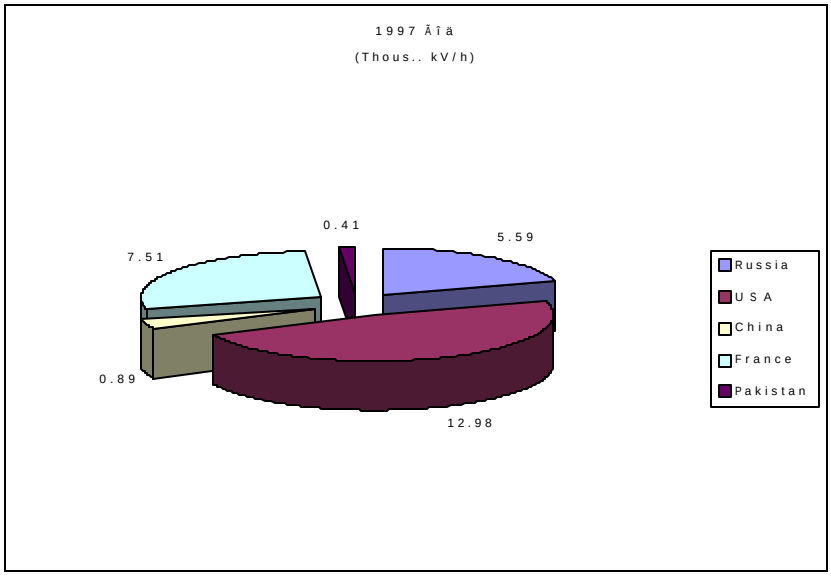
A share of natural raw materials industries in the structure of GDP continues to increase. Thus, in Kazakhstan, it grew 2.8 times during 1992-1999. The flow of foreign capital – main investment source in many countries, is still directed to the mining sector, oil and gas area, metallurgy of ferrous and non-ferrous metals. At the same time, there are degradation of processing industry, especially in Kazakhstan and Kyrgyzstan, and a weak development of ecologically friendly activities and reproduction of natural resources.

A low manufacturing – technological level of industrial production in the region preconditions high material and energy consumption in the producing cycle. The level of energy consumption per capita in CAR countries is 2-4 times less than in Europe and USA. At the same time, the energy consuming industrial production of the region exceeds its analogues in Europe in 2-3 times. In the structure of prime cost of industrial goods material expenses dominate, the share of transit consumption in manufacturing ranges from 5% of GDP in Kazakhstan and up to 15 % in Uzbekistan, which testifies to an excessive use of natural resources.

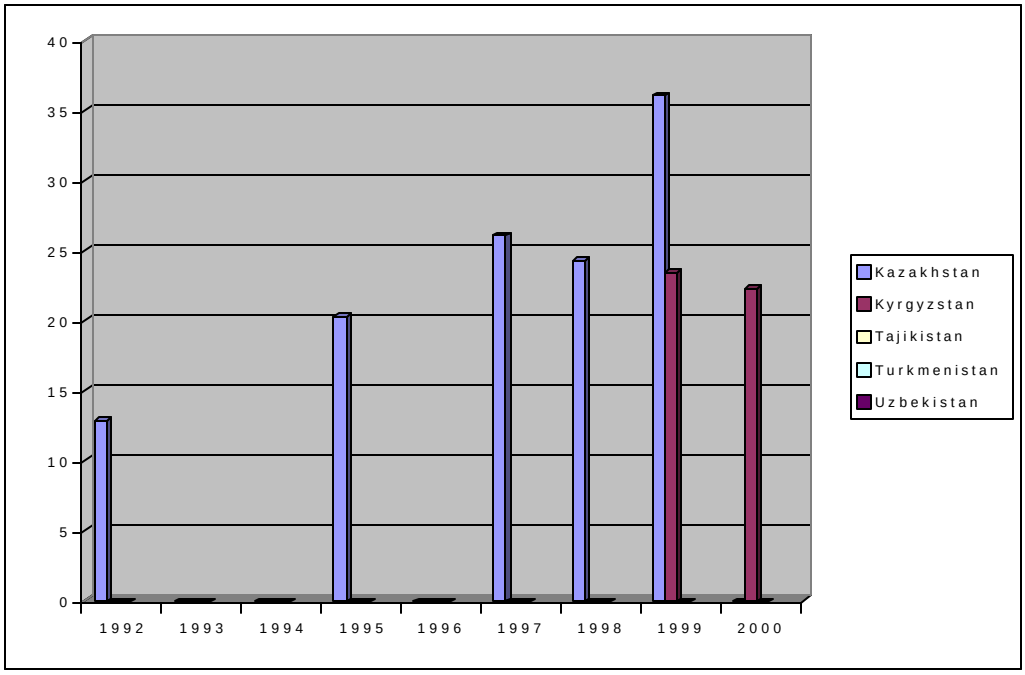
Annual power consumption per capita, thousand kilowatt/hour



Power consumption per capita (international comparisons)



Share of natural-raw branches in manufacture of an additional product (share of mining branch), %



III. MAJOR ENVIRONMENTAL PROBLEMS IN CENTRAL ASIAN COUNTRIES

After independence in the CAR, a new environmental policy for the transition period started to be actively formed. It targeted strengthening of normative and legislative base, development of economically efficient nature use methods, improvement of the national management systems, providing more rights and powers to the local governing bodies. More attention was given to inventory taking of waste disposal and contamination sources, enterprises changed their attitude to their activities planning, the mechanism of economic stimulation of environmental protection was started. The first steps in international cooperation, participation in international and regional environmental programs were new for the countries in the region.

Constitutions, laws, numerous resolutions of governments, Strategies and national programs of the countries reflect the understanding of the fact, that a lot of success of the social and economic reforms, especially in the countries with vulnerable environment, depends on the environmental policy, that's pursued by the country. Today the states of the region have their own environmental strategies, programs and environmental action plans (NEAPs).

The role of UN ECE Program 'Environment for Europe" in involving the countries of the region in a comprehensive international process of raising awareness of environmental problems, priority setting and decision making should be especially emphasized.

Environmental priorities of the countries in the region are different, just as their natural, social and economic conditions. The states located upstream of the rivers focus on the problems of erosion, protection of water collection territories, forest and biodiversity preservation. The states located downstream of the rivers focus on such priorities as desertification, land salivation and degradation, transborder water contamination and biodiversity preservation of migrating species in particular.

The following priority problems have been identified for Central Asia as a result of joint work by the representatives of the countries, consultants, scientists, community representatives and experts supported by UNDP project **"RPASB"**:

1. Ecosystems Degradation in the Aral Sea Basin (ASB)

1.1. Deficiency of Water Resources
1.2. Pollution of Transborder Water
1.3. Land Degradation
1.4 Disastrous Change of Hydrological Regime of Rivers
1.5. Destruction of Biodiversity in ASB
1.6. Degradation of Mountain Ecosystems
1.7. Contamination of Transborder Air
1.8. Danger Posed by Dam Destruction

2. Negative Effects of Global Climatic Change
3. Contamination from Oil and Gas Industry
4. Transborder Wastes Movement
5. Ozone Layer Destruction

Most of the regional environmental problems are caused by the economy, driven by resource and raw material production. Natural resource and raw material production industries, that negatively affect the environment, constitute about 50% of the Central Asian economy.

The low level of production and technology in the region leads to high inputs of energy and materials used for production. For example, specific energy inputs used for industrial production have gone up by 25% as compared to 1990. Material inputs are 0,7 times higher than in the CIS countries and 1,5 times higher than in the western countries

1. Rational Use of Land Resources and Anti-Desertification Measures

Agenda 21 emphasizes the importance of rational use of land resources and anti-desertification measures. These issues have a special importance for the Central Asian region. The analysis of the land fund use in the region says, that the area of arable land tends to decrease in Kazakhstan and Kyrgyzstan.

National Statistical Data					
	Kazakhstan	**Kyrgyzstan**	**Tajikistan**	**Turkmenistan**	**Uzbekistan**
Change in Land Use (Restructuring).					
% of Arable Land / Range lands, Pastures / Forests as related to the total area of agricultural land.					
1992	12,4/	7/ 1/45	18,2/80 /	-	15,9/82,4/4,3
1993	12,4/ /5,3	7/ 1/	18/79,4/	-	16,0/82,2/4,1
1994	12,4/ /4,2	7/ 1/	-	-	16,5/91,3/7,7
1995	11,7/ /4,4	7/ 46/	17,5/79,7/	4,2/ 95,5/ 0,2	15,1/83,2/7,2
1996	10,7/ / 4,6	7/ 46 /	16,6/80,4/	-	15,28/83,2/7,6
1997	9,8/ / 7,2	7/ 1	16/80,5/	4/ 95.8/ 0,2	15,2/83,2/7,7
1998	8,9/ / 3,7	7/ 46/	16,6/81,5/	4/ 95.7/ 0,3	15,2/83,2/7,8
1999	8,0/ / 7,.8	7/47 /	16,2/81,2/	4/ 95,8/ 0,2	15,2/83,2/8,1
2000	8,0/ /7,8		16,1/81/		16,0/88,1/8,6

Desertification is one of the most serious environmental problems for the Central Asian states. Deserts and semi-deserts constitute a large part of the Central Asian territory. They occupy 60% of the

territory in Kazakhstan and up to 80% of the area in Turkmenistan and Uzbekistan. Despite sensitivity to external exposure, theses areas continue to be extensively used for agricultural production. Arid climate and irrational nature use contribute to land and pasture land degradation, which leads to significant decrease of agricultural productiveness, that is the basis for sustainable development in the CAR countries. Significant portions of irrigated areas are subject to salinization – which is from 16% in Tajikistan, up to 30% in Kazakhstan and 95% in Turkmenistan.

Though decreased numbers of livestock contribute to natural restoration of pastures, there is a tendency of overgrazing in the territories located in proximity to populated areas. Population growth in the region will further on aggravate land degradation through such factors as overgrazing, tree cutting and inappropriate crop rotation. This situation will worsen unless specific social and economic programs are implemented.

Problems of desertification and adaptation to draught are connected with a number of natural factors and man made exposures. Among the natural factors are such as decreased rainfall. Its monthly indicator decreased by 50 mm within 10 years. Among man made exposures are such as overgrazing, excessive tillage, decrease of open water surface areas in the process of river run-off regulation, forest degradation, man made and chemical pollution.

Desertification processes in the region are aggravated by the shrinking Aral Sea, land salination, forest cutting, increased salt and dust migration, mineralization of surface and underground waters, water logging of irrigated areas and areas adjacent to them, etc.

Recommendations:

- Improve irrigation system, strengthen infrastructure and equip facilities with new equipment and technologies;

- Speed up restructuring of farms and reforming;

- Ensure that land use planning provides for ecosystem preservation alongside with food security;

- Improve and enforce laws and measures to support sustainable land use and provide limitations for the use of fertile arable land for other needs;

- Use environmental landscape planning for ecosystems and water dividing areas;

- Preserve appropriate traditional and local farming methods;

- Identify an opportunity to include the cost of land and ecosystems into the array of national indicators of economic development, for example, into GDP indicator.

2. Irrational Use of Water Resources and Deterioration of Their Quality

Water is one of the crucial factors in the Central Asia, that identifies the possibility for life and development in the arid zone. Availability of water resources and water supply are the major factors limiting distribution of population and economic activity in the Central Asia.

Water resources of the region are primarily the water resources of the basins of the largest rivers in the Central Asia – the Amudarya and the Syrdarya, that hold in average about 127 cubic kilometers a year. 78 cubic km a year is held in the Amudarya basin. It also includes rivers Zeravshan and Kashkadarya with an aggregate capacity of 233,4 cubic meters/sec, that are genetically connected with Amudarya basin. Average run-off of the Amudarya river is about 37 cubic km a year

In the mountainous area of the basin there is more than 4 thousand of big and small glaciers of the total area of over 4 thousand square km. There is more than 10 large water reservoirs upstream of the Aral basin with the total capacity under regulation 30 billion cubic meters and several dozen of small reservoirs for seasonal and decade irrigation.

Water resources of the region are primarily used in agriculture, most of all for irrigation (80 – 90%). 7,95 million hectares are irrigated in the region. However, due to low efficiency of most of the water systems, a lot of water is lost. As a result, water consumption downstream is decreased, deltas shrink, as well as many reservoirs in the regions, first of all, the Aral Sea. That leads to negative environmental effect and escalated social and economic tension.

Annual amount of consumed surface and underground water in CAR countries constitutes from 20% of the available water (in Kazakhstan, Kyrgyzstan, Tajikistan) to 80-90% (in Uzbekistan). 90% of all consumed water is surface water, while renewable water resources are insignificantly consumed (0,4%,- in Kazakhstan and 20%- in Kyrgyzstan).

Underground and surface water consumption per capita decreased by 1,2-2 times in CAR. Population of 62-90% cities and towns is provided with water for domestic use and drinking, 70-76% of people in the countryside are provided with water. Each year the situation with good quality drinking water to be provided to the population is getting worse. This problem is especially acute in Kazakhstan, where about 4 million people do not get water form the water system, that includes 16,5% of people, that use water from open reservoirs for drinking and 3,2% use water of doubtful quality for drinking.

The problem of water supply is extremely relevant for Kazakhstan, Turkmenistan and Uzbekistan, where surface waters tend to be excessively consumed. In fact, the status of practically all water sites in the region is unsatisfactory, at the same time control over the quality of the water sites has been reduced everywhere..

Specific indicators of water consumption in the populated areas and of water used per a unit of production in CAR exceeds by many times similar indicators in water consumption in other countries. However, there are still some strategies targeting an increase of water consumption in the region.

At the moment water quality in water sources of the region tends to deteriorate and the amount of fresh water, that is used, tends to increase. Deterioration of water quality after collected drainage waters are dumped into it affects the health of the people, that use water from rivers for drinking.

The major causes of water quality deterioration and decreased water reserves in the region are:

- mineralization and hardness of water as a result of use of water for land irrigation;
- -release of unpurified industrial and household wastes in the zones of surface and underground water formation;
- -migration of nitrogen and phosphorus fertilizers, ballast elements, heavy metals, microelements, pesticides to the zones of surface and underground water formation;
- -no compliance with filtration requirements at the sites, where industrial wastes are generated;
- - unreasonable use of water for irrigation and irrational use of water for technological needs;
- -no effective management systems, economic mechanisms of water preservation and means of water consumption tracking.

Recommendations:

- *Develop and implement an integrated system of management for water and energy resources and environmental protection based on the basin principle;*
- *improve and bring to compliance with the international standards the normative, legislative and methodological base to address water issues and put in place economic mechanism stimulating water preservation;*
- *ensure, that NGOs and other stakeholders are involved in the process of preparation and implementation of water programs and projects based on the principle of partnership;*
- *promote introduction of water-saving technologies and equipment, implementation and dissemination of pilot projects;*
- *disseminate knowledge to water users and increase the capacity of managing bodies;*
- *in connection with the resolution of the UN General Assembly based on the initiative of the President of Tajikistan announce the year of 2003 the International Year of Fresh Water; start developing a subregional strategy, that would cover the problems of regional reservoirs (the Caspian and the Aral), water sources and drinking water.*

3. Status of Environment in the Aral Region and of the Aral Sea

The Aral crisis or destruction of the Aral Sea ecosystem is the most vivid example of occurrence and interconnectedness of all the above regional environmental problems, affecting social and economic development of all states in the Central Asia. The situation of crisis in the Aral region,

that caused destruction of agricultural production, decrease of the quality of life and life expectancy, occurred as an effect of planned intensive development of irrigated farming and irretrievable water consumption for irrigation.

River run-off to the deltas of the Amudarya and Syrdarya is not enough for the preservation of their ecosystems. This is where intensive drying and salination of land is continued, there is a severe degradation of hydromorphic ecosystems. The former bottom of the sea has become the source of salt distribution throughout the territory of the region. Decreased size of the sea affected the circulation of the air streams. There is no possibility to engage in fishing and hunting. Morbidity rate has gone up (those are diseases caused by the bad quality of water and respiratory diseases), life expectancy among the population has decreased, unemployment has gone up, there is some environmental refugees.

This served as a basis for strengthened regional cooperation. The first agreements between the governments of the Central Asia, that were adopted after the independence of the countries, targeted resolution of the environmental problems in the Aral region. A number of declarations, establishment of the International Aral Salvation Fund with its working bodies, programs and projects, a wide cooperation with donor organizations and practical measures on the regional, national and local levels are the result of the last year.

From the middle of 1980-ies, a decision was made to stop the development of irrigation and to introduce large-scale projects for water saving in irrigation. At the same time, measures were taken to improve the conditions of living for the population in the Aral region through construction of health care institutions, water and gas supply systems and other social facilities, application of stringent water use measures, addition of water to the delta of the Amudarya and Syrdarya. As a result of all the measures, the Aral region received 10,3 cubic km of water in 1995, 12,5 cubic km of water in 1996. Run-off from the Amudarya (5,1 – in 1995 and 7,46 km3 – in 1996 ã.) is totally used to feed the delta of the Amudarya – that is man made lakes, that were created to prevent the process of desertification in the Aral region.

Together with that, people in the region and donors realize, that it is not effective to manage water resources separately from energy management, agriculture and environment, without full involvement of community, businesses and local authorities.

4. Status of Environment in the Caspian Basin

The Caspian Sea is the largest water reservoir in the world free of run-off. Kazakhstan and Turkmenistan are located on the shore of the Caspian. Transgression of the sea, that started in 1978, is accompanied by flooding of the territories adjacent to the shore, that host refineries of these countries, as well as populated areas – Aktau, Atyrau, Turkmenbashi.

Flooding occurring throughout the areas adjacent to the sea, including oil production districts, washes away the oil products, industrial and utility wastes from the populated areas and takes them to the sea, which poses a danger for biodiversity and preservation of the whole Caspian ecosystem. Daily catch of the Caspian sturgeon has significantly gone down from tens of thousands of tons to ten thousands of tons.

The measures, that are applied, and the existing reservations (Khazarskiy reservation in Turkmenistan – 262 thousand hectares, a reservation zone of 10 kilometers on the Kazakhstan shelf) are not enough to rectify the situation.

At the moment the countries of the basin with support from the international organizations (The World Bank, UNEP, UNDP, Tacis) and other stakeholders are developing the Caspian environmental program. However, it is developed separately from the major economic activity, carried out in this region and so far has had a weal influence upon the resolution of the environmental problems.

Recommendations:

- *make a transition to the basin principle of water reservoir management with the prospect of creating a common infrastructure for management of water reservoir resources and ecosystem under the aegis of the UN;*
- *prepare and sign conventions on the Aral Sea and the Caspian as a legal and institutional basis for joint actions;*

- *hold a joint meeting to exchange experience and unite efforts of the Aral and Caspian programs; strengthen the status of the Caspian environmental program, integrate it into economic programs of the states and businesses.*

Preservation of Biodiversity

Species diversity of flora and fauna of the Central Asian countries and their affluence directly depends on the status of environment. Active exploitation within several decades has already surpassed regeneration capacity of nature, which caused degradation of biogeocenosis and significant decrease of species. In some cases these processes are irreversible.

The number of endangered animals and plants is growing. Uncontrolled production of medicinal materials and food has significantly reduced the number of such plants as liquorice, elecampane, ephedra and other. Poverty of countryside people and increase of the number of refugees force these people to use halaxylon and flood plain forests for fuel èõ äëÿ òîï ëèâà. The area under these species around the Amudarya river has decreased from 150 thousand hectare (in 1928) to 22-23 thousand (in 1993).

At the moment there are 34 state reservations and 10 state national parks on the territory of the countries with the total area of 6,3 million hectares. In total, around 2,8% of the whole territory of the Central Asian countries is under a preservation regime. There is a belief, that to ensure sustainable preservation of biodiversity, the share of intact natural landscape should be no less than 7% of the total area of a state.

Biological diversity in the region is continually lost, first of all, because of the destruction of natural habitat, excessive exploitation of agricultural resources, environmental pollution (development of mining and energy) and introduction of foreign plants and animals.

In accordance with the international recommendations, the territory of the protected areas, that is necessary to ensure adequate preservation of biodiversity and to sustain vitally important environmental processes, should constitute about 10% of the total area of the country. The dynamics of the below indicators shows the growth of areas under special protection in CAR countries for the period after the RIO-92. Protected areas in Tajikistan constitute 21,3 %, in Uzbekistan and Turkmenistan - over 4%, in Kyrgyzstan -1,17% and less than 1% in Kazakhstan.

Despite the measures, taken by the Governments of the Central Asian countries for preservation of biological diversity, the process of its destruction is continuing. 221 species of animals and 287 plants are in the Red Book of Kazakhstan, 68 species of animals and 65 plants are in the Red Book of Kyrgyzstan, 162 and 222 animals and plants in the Red Book of Tajikistan. The lists of the second edition of the Red Book of Uzbekistan have 301 plants. Different categories of rare and endangered species of animals include 161 species that are on the ÑÈÒÅÑ lists and in the Red Book. The second edition of the Red Book was published in 1999 in Turkmenistan, it has 152 species of vertebrates and invertebrates and 109 plants. In 2000 CAR countries signed a memorandum providing for preservation of the Bukharskiy Deer.

Protected Areas (reservations and national parks)
% from total area

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
1992	-	-	21,3	-	3,0
1993	-	-	21,3	-	3,0
1994	-	-	21,3	-	3,0
1995	0,35	1,17	21,3	-	3,0
1996	0,55	1,17	21,3	-	3,0
1997	0,55	1,17	21,3	-	3,0
1998	0,55	1,17	21,3	4,1	3,6
1999	0,59	1,17	21,3	4,1	4,6
2000	-	-	21,3	4,1	4,6

Share of Endangered Species , %, animals/plants (without mushrooms)

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
1992	-	0,61		-	1,03/1,5
1993	-	-		-	-
1994	-	-		-	-
1995	-	0,78	4,9/1,5	-	-
1996	-	0,78		-	-
1997	23,1/4,2	0,78			-
1998	-	0,78		-	1,07/2,7
1999	44,17/2,2	0,78		1,17/1,56	-
2000	-	-		-	-

Recommendations:

- identify biodiversity territories and sites in the CA region, that are subject to protection, develop and implement common strategies;

- develop econetworks of specially protected areas;

- organize resource and environmental monitoring of forests and ÎÎÏ Ò;

- develop eco tourism and traditional crafts promoting preservation of biodiversity;

- contribute in implementation of the Asian Pacific Strategy of Protection of Migrating Species and Pan-European strategy for preservation of biological and landscape diversity.

6. Degradation of Mountain Ecosystems

Sustainable development of mountains was called a global priority and was included in chapter 13 of Agenda 21. Environmental, social and economic well-being of people in the most densely populated and economically developed areas of the Central Asian countries largely depends on whether the natural equilibrium in the mountains has been preserved.

Mountains contain fragile ecosystems and biodiversity centers and play a significant role of "the world water towers", supplying fresh water in river flows. Mountain ecosystems today carry more and more expressed traits of degradation. Some of them are deforestation, activation of dangerous eczogenic phenomena, reduction of pastures productivity. As a result, the hydrological regime is disrupted, run-off is distributed inappropriately for irrigation and water resources are decreased. Adjacent densely populated foothill valleys with high industrial potential significantly affect mountainous areas, in particular, they cause glacier pollution. There is also an issue of regulation of the recreational load on the mountain ecosystems.

Based on the initiative of Kyrgyzstan, the UN General Assembly made a decision to announce the year 2002 the International Year of Mountains. At the moment the countries are in the process of discussion of the Mountain Charter. The final international conference is planned for the end of 2002 and will be held in Bishkek, the capital of the Republic of Kyrgyzstan. The countries of the region have developed the strategy of sustainable development of mountains with the support of ADB. The working group, that was formed within the framework of the project and the regional office in cooperation with CAREC are finalizing the Strategy, that is to be presented to and approved by the countries of the region.

Recommendations:

- finalize and approve the regional strategy of sustainable development of mountain ecosystems with a package of priority projects for the presentation at the Global Summit;

- take an active part in the activities devoted to the International Year of Mountains in 2002, contribute in adoption of the Mountain Charter;

- raise the level of knowledge among the population in areas related to preservation of mountain ecosystems and rational use of water, land and biological resources;

- promote activities, that are not related to farming (traditional crafts, home production, use of wild nature, fishing, light industry production in the countryside, tourism);

- with assistance from the international organizations promote establishment of agencies, that would provide assistance to the poor in the mountains.

7. Environmental Pollution, Climatic Change, Ozone Layer Destruction

One of the priority environmental problems in the region is pollution of environment of the urban territories. The major sources of air pollution in the Central Asian countries are heat energy enterprises, ferrous and non-ferrous metallurgy, construction materials industry, utilities and transport.

There is a general tendency of reduction of releases containing contaminating substances into the air. If in 1990, 6793 thousand tons were released in the air, by 1995 this number was decreased by 2084 thousand tons (30,7% reduction within 5 years). Kazakhstan has the greatest share of contaminating substances released in the atmosphere, which is 68%. The shares of other Central Asian countries are: Uzbekistan - 18%, Turkmenistan - 10%, Kyrgyzstan and Tajikistan - 2% each.

In some countries while the releases of the fixed sites are reducing, there is an increase of releases by automobile transport, the share of which is up to 80% of the total volume (Kazakhstan, Kyrgyzstan). All this causes increased concentration of toxic substances in the atmosphere, which exceeds the norms and thus significantly affects human health, climate change and ozone layer destruction.

Within the framework of measures applied to preserve the climate, the countries ratified a convention and with the support from the donor organizations developed strategies and reports and are in the process of projects implementation. National reports on climate change, prepared by Kazakhstan and Uzbekistan, show, that there is a lot of potential available in the region for participation in the mechanism of Kyoto Protocol, as well as a big dependence of social and economic programs on climate change. For example, there is evidence, that water supply in Kazakhstan has gone down by more than 30%, as well as land and pastures productiveness. In order to form the common position of the region, the Central Asian countries with participation of the Caucasus and Moldova formed an official group for the process of negotiations in this area.

There is a clear need to join together the efforts of the countries related to the programs focused on climate change, water and energy and development of new common programs and projects.

The countries of the region, that are not the primary producers of ozone destructive substances (solvents, spray propellants, foam makers for fire extinction) have developed strategies for ozone layer protection in accordance with the convention. The problem of ozone layer protection is primarily connected with the state regulation of supply and use of ozone destructive substances.

Democratic movement to close the nuclear testing site in Semipalatinsk, which used to be a significant part of the global arms race, was a significant event for Kazakhstan and the whole planet. This movement initiated by the pubic union “Nevada-Semey” managed to stop all nuclear tests and to close the military testing site.

The resolution of the UN General Assembly, adopted in 2000 in support of the efforts of countries focused on rehabilitation of consequences of the nuclear tests, shows how important this event is for the whole planet. However, one can’t say, that political decisions made by the international community are accompanied by the adequate assistance in liquidation of nuclear tests consequences.

Nuclear, military and space sites are primarily located on the territory of the Republic of Kazakhstan. The sites, where the parts of the rocket carriers fall whenever there is a launch from the space site Baikonur, is heavily contaminated with geptil. In 1999, as a result of unsuccessful launch of two Russian rockets, the regional air space was contaminated by toxic fuel “geptil”, that is why all Central Asian countries are interested in addressing the problems of air pollution by the military and space sites.

The effects of biological tests on the island of Vozrozhdenie (Kazakhstan/Uzbekistan) in the Arala Sea are not known well enough, as well as the consequences of production of biological materials in Stepnogorsk (Kazakhstan) and Karakalpakia (Uzbekistan). Wastes dumps from the

uranium mines near Atbasar (Kazakhstan), Chkalovsk (Tajikistan) and Maili-Su (Kyrgyzstan) pose a danger of transborder pollution of the whole region by air or water.

There is a great amount of industrial and household wastes on the territory of CAR countries, generated for a long period of economic activity. They negatively affect the environment. As a result of activity of mining and metallurgic enterprises there is more than 25 billion tons of industrial wastes piled in the country. Toxic wastes of ferrous metallurgy constitute a significant part in the total amount of wastes.

A special problem is wastes dumps of surface rocks that occupy significant territories. Storing toxic industrial wastes in open dumps on unprepared sites (for example, arsenic containing wastes in East Kazakhstan Oblast in Kazakhstan, uranium containing wastes in Kyrgyzstan, etc.) leads to penetration of toxic substances into the atmosphere, underground waters, soil, surface water reservoirs. As a result it negatively affects human health and well being of ecosystems.

The system of industrial wastes recycling is not developed in the Central Asian countries. Wastes dumps of mining and metallurgic enterprises contain a big selection of valuable components. There are certain resources for those industries that use recycled materials.

Household wastes are also a big problem, they contain such toxic elements as mercury, cadmium and other. The countries of the region do not have any modern system of selection, recycling and safe storage of wastes, which would be of great economic and environmental value. Only the first steps are being taken in this direction in big cities of the Central Asian countries (Tashkent, Almaty).

State control and expertise are very important for waste reduction in the region. However, their effectiveness is significantly undermined because of the weak system support at the level of general policy, by ineffective planning at the level of national, industrial and territorial programs, as well as by the lack of natural and monitoring research and zoning, that could be the basis for assessment and study of certain sites.

The criteria, inherited from the narrow-section approach to environmental protection, that are still applied for program and project assessment, are also a problem. These criteria make it possible to assess the parameters of an object by each natural environment separately, with no attention paid to ecosystem requirements, as well as to the issues of object usefulness as a whole. At the same time, the normative and methodological basis of expertise in the area of land contamination, biodiversity, climate change, etc. is less detailed. As a result, subjective factors play a significant role in decision making, often from expertise and technical assessment they are shifted to political area, as it was, for example, with the issues of water division.

Recommendations:

- *merge the efforts of the countries in addressing the problems of industrial and other pollution, especially for those, that are transborder problems, using the system of oversight and monitoring, strengthening economic incentives and improving the laws;*
- *develop and implement strategies and programs for energy saving and introduction of alternative energy sources, adaptation for climate change;*
- *implement the principles of strategic environmental assessment in the process of decision making related to industrial, military or other programs and projects, including wastes burial;*
- *expand understanding and strengthen regional and international cooperation on the problem of nuclear wastes;*
- *strengthen control and inspection services and expertise, their normative and legal basis should correspond to the needs of ecosystems and should be supported by system measures.*

IV. STRENGTHENING OF ROLE OF THE NON-GOVERNMENTAL ORGANIZATIONS

Necessity to develop new environmental policy became especially important in 21 century, when the whole mankind will join to solve the problem which all of us faced. The governmental measures in this area are not enough. The Governments can fulfill very limited role and especially regarding to global environmental issues. An attempt to view national interests in more high priority than global interests is an obstacle not only for environmental activity. This evidences about limited possibilities of national Governments.

Broad public should join with the business community, society with the media. We can see the road to a
future when each sector of the society fulfill assigned task and will work together with all other sectors.

Humanity should build new institutes in order to take into account global interests. Significant role of NGOs, which they can play, is obvious. In spite of that many of NGO are established for the solving of local and not huge problems, they are free to discuss global environmental problems regardless of national and governmental frameworks. In 21 century NGO will be the key part of the society and become the partners of Government and business sector in their activity.

Public participation is important condition for implementation of Agenda 21 and efficient system of decision-making. In Central Asian countries to this direction was given very high priority during last years. Almost all regional conferences and seminars included this aspect or held with participation of public organizations.

As a serious achievement of the Central Asian region can be considered the fact that at the 4th Pan-European Ministerial Conference on Environment (Arhus, 1998), the states of UN ECE regions, all countries of Central Asian region have signed the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environment Matters. This became possible because of active efforts of NGO of the region. At present all states of the region have been ratified it (Uzbekistan is in the stage of coordination).

The Convention foresees the obligations from the side of state bodies to provide information and take into account the opinion of public in decision-making in the field of environmental protection and gives to public organizations the right to demand fulfillment of these obligations.

However, the role of public organizations still remains weak. This connected with inadequate NGOs capacity, unsustainable financial and technical base and also with unreadiness of state bodies and (although it is sounds strange) international organizations to involve NGOs as an equal partner to the programs of national, regional and local levels.

It is necessary to obtain direct participation of NGO representatives in the process of decision-making, through representation of NGO in governing and consulting structures and councils of states and international organizations. Implementation of the last point is the important moment in the process of democratization of the society.

Important point in this issue is the administrative costs of NGOs. Normally, financial support is rendered or project is supported without recognition of administrative costs on the basis that the members of NGO work on volunteer basis. In such case NGO can not survive in such system of financing and support of the projects.

NGOs community supposes that existed tax system does not create incentives for improvement of environment and NGOs development and legislation is not complemented by the mechanisms for execution of official declaration on NGOs.

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Quantity of environmental NGO (data needs to be amplified)					
1992	2	-	-	-	
1993	-	-	-	-	
1994	7	-	-		
1995	-	18	-	-	
1996	24	-	-	-	
1997	37	-	-	-	
1998	125	89	-	-	
1999 2000	212 300 in total, 130 of them are active	117 more than 200	21 21	5 5 officially registered and 100 unregistered	22 are registered and near 300 unregistered

During last years there is a tendency on strengthening of NGO influence to the politics of the countries. As a result of round-tables and seminars in the region, the representatives of environmental ministries, parliaments, local administration bodies accept NGO proposals and conduct joint activity. In Kazakhstan environmental NGO created NGO Coordinating Council, and achieved the agreement with the official bodies on cooperation and exchange of information.

Many of international organizations and funds render support to efforts and initiatives of NGO, attract them to their programs, but attraction of NGO is frequently formal.

Recommendations:

- *States should create the condition for the development of non-governmental sector, including favorable tax regime for their activity, assistance to their involvement in programs and projects, rendering of direct financial and technical support.*

- *NGO should become direct participants of the decision-making proœss at all levels, defense of local community's interest, saving independence from the governments.*

- *International organizations and donors should change still alive practice of formal attraction of NGO to the projects, coordinated or financed by them.*

- *It is necessary to integrate the mechanisms for realization of Arhus Convention on the level of national legislation's with the taking into account of existed experience and practice within the region.*

Support the striving of NGO to consolidation of efforts, loaning them, for instance, access to Internet, information about global and regional issues on environment and development.

V. LEGAL AND ECONOMICAL MECHANISMS

One of the achievements of the past period is the normative-legal basis, created by the countries, in the environment and development sphere. As the base of the countries' legislation bases is represented by the common legislation of the former Soviet Union it provides the conditions for the further unification of the legal systems of the Central Asian countries.

At the same time, the legislation applicable for the purposes of the stable development does not contain yet the definite provisions in respect of the responsibility, necessary jurisdictions concerning the pollutants and inducements against the pollution, the principles of the public concern and the guarantees relating to the transparency of the actions taken. In the majority of these spheres it is necessary for the Central Asian countries to strengthen further on the corresponding legal and institutional measures.

In accordance with the legislation in the Central Asian countries it is provided to use the following economic instruments: environment protection measures planning and financing; payment for the natural resources use; payment for the environmental pollution; payment for the protection and reproduction of the natural resources; economical stimulation; environmental insurance; formation of the Environment Protection Funds. But the many of these instruments are either not in action or do not stimulate.

The other economic instruments is widely spread abroad, such as of the sale of the permits and licenses for the emissions, system of the hypothecation value reimbursement, as well as so called grants, i.e. gratis aid, lax credit for the environment investments, accelerated depreciation, environment insurance and environment stimulation. These instruments have not yet become wide spread in the Central Asian countries due to the absence of the necessary normative mechanisms for its implementation.

The urgent question is to stop the water supply subsidizing and it will allow, according to the experts' estimations, to reduce the water discharge by 20-30%, and in some parts of the Central Asia – up to 50%. It seems to be possible without any seriously environmental destructive projects of the water supply development to provide the considerable part of the population, which now lacks water, with safe drinking water.

Recommendations:

- *Further work on the legal structure should be focused upon the development of the by-laws and acts necessary to fill up the gaps in the legislation (ozone, biodiversity, flora) and for the already existing laws to take effect in full force. The by-laws regarding the adjustment of the public concern procedures and regarding the exercise of right for the access to the environment data should take the priority. The old soviet legislative act which are still applied are to be modernized;*
- *To study the possibility of the synergism of the conventions in one country as well as in the region. To develop the Convention and Strategy regarding the stable development of the Central Asian countries;*
- *To strengthen the regional mechanism of coordination and management of the actions taken to implement the goals of the global conventions and programs; to ensure its obligatory execution, to provide for the development and implementation of the execution mechanism;*
- *To integrate the economic evaluation of the natural resources and environment into the process of decision making;*
- *Unify the environment protection legislation and economical mechanisms in accordance with the generally recognized propositions of the international law; the countries are to consider the question in order to include the stable development principles into their Constitution or to accept the frameworks for the laws regarding the stable development;*

VI. FINANCIAL RESOURCES

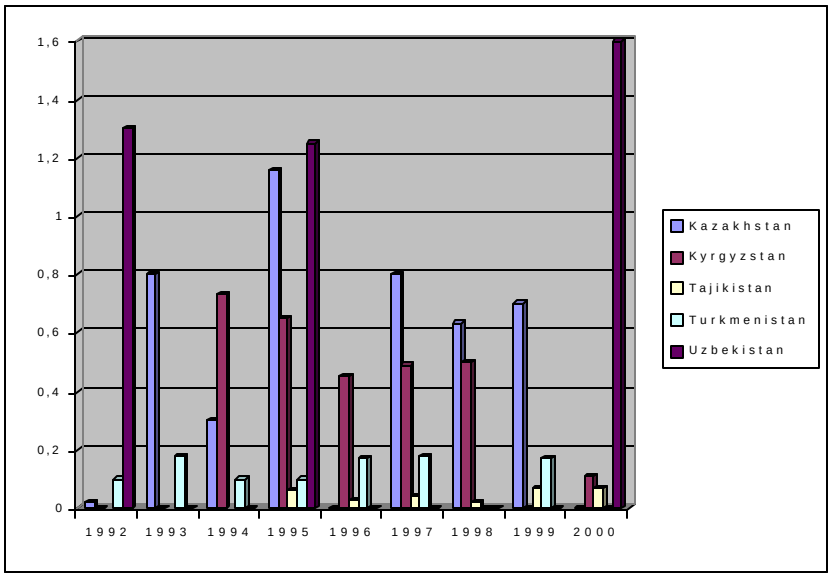
In order to implement the stable development program, set forth in the Agenda for 21 century the considerable capital investments are required. Though the main part of the finance is to be provided at the expense of the state and private sector, the countries of the Central Asian Region (CAR) lack resources an techniques necessary to solve such global problems as climate change, biodiversity protection, etc.

During the last years as it has already been mentioned the tendencies of the macro-economic stabilization are noticed in the CAR, but there is still budgeted deficit and the national debt is still

large. In Kyrgyzstan for 1994-2000 it increased in 3.6 times and reached 137% from the gross domestic product (GDP). In Kazakhstan the situation is the same: during the same period the debt increased in 1.8 times and constitutes 49.4% from the GDP. The situation is bit different in Tajikistan. The foreign debt in this country tends to the reduction, during the same period it decreased in 1.5 times, but the amount of the debt remains high - 53.4%from GDP.

The decrease in financing of the environmental activity in the CAR aggravates the environmental problems. In 1998 in Uzbekistan the investments in the environment constituted 1.7% from GDP, in Kyrgyzstan – 0.1% , in Kazakhstan – 0.5%. The unsteadiness in the financial sphere resulted in the decrease of the investments in the environment, the amount of which is less than 1% from the GDP in the majority of the countries. In Uzbekistan, the amount of funds spent on the environmental measures increased from 1.3-1.25 in 1992 up to1.6% from the GDP in 1995.

Environment Protection Expenses in % from the GDP



National Statistics

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Environment Protection Expenses in per cent from the GDP					
1992	0,02	-		0,1	1,3
1993	0,8	-		0,18	-
1994	0,3	0,73		0,1	-
1995	1,158	0,65	0,06	0,1	1,25
1996	-	0,45	0,03	0,17	-
1997	0,799	0,49	0,04	0,18	-
1998	0,634	0,50	0,02	-	-
1999	0,702	-	0,07	0,17	-
2000	-	0,11	0,07	-	1,6

International comparisons, Debt in % to the GDP

	Russia	Ukraine	Poland	Turkey	Pakistan
1997	28,7	22,2	29,5	47,1	47,1

Environment Protection Expenses in % from the GDP

	Russia				
1999	2				

The countries of the region face the budget problems as a result of the currency devaluation and unrealized hopes to trade in natural resources. The countries of the CAR rather actively use the financial assets of the foreign investors and donors at the first stages of the environment protection programs and projects implementation. At present several main donors, including the Global Environment Foundation (GEF), European Union, World Bank, Japan and US render the environmental assistance to the Central Asia. UNDP, UNEP, TASIS and other programs helps the Central Asia in the project implementation.

At present the GEF carries out three big Central Asian projects: management of the water resources and environment of the Aral Sea basin, biodiversity of the Western Tien Shan and Caspian Environmental Program. The bilateral donors, such as Finland, Germany, Switzerland and Netherlands make additional investments in these projects.

In Kazakhstan, Kyrgyzstan, Uzbekistan with the support of the World bank, UNDP and TASIS the NEAP are developed and implementation of the projects, included into it, has begun. The involvement of the non-governmental organization (NGO) into the local environmental management is supported. IUCN provided the financial support for the active workers and researchers in the sphere of the biodiversity in Tajikistan.

At the same time the foreign aid, provided by the international organizations and donors often turns out to be ineffective because of the difference in the priorities and insufficient potential of the countries concerning the preparation and management of the projects.

Recommendations:

- *To increase the financing of the environment protection measures at the expense of the national budget, local budgets and enterprise assets;*
- *To implement the other countries' experience of the "debts for the nature" exchange, to use the assets for solving the ecological and social problems of the region;*
- *The donor and international financial organizations are to change totally the existing practice when the aid projects are usually managed and carried out by their own employees and international consultants close to them;*
- *To form the mechanisms to make the sponsor aid directed due to the definite matter, to investigate new models of collaboration between the donors and receivers;*
- *To form special and long term "Public Foundation of the Stable Development of the Region" with the branches in every country to support the efforts of the countries of the region in the development and implementation of the Convention and Strategy regarding the stable development of the CAR, which would be jointly managed by the representatives of the donors, governments and local communities.*

VII. SCIENTIFIC EFFORT AND EDUCATION

Taking into consideration that the transition period was accompanied by the important reforms in all spheres and required the adequate changes in the system of planning, management, monitoring with the appropriate scientific procurement, it becomes obvious that these tasks could not be fulfilled without the state support.

Until now in the counties of this region the old system of the control under quality of and impact on the environment, which was created for the administrative economy and laid in the basis of the economical decision planning, public examination and inspection control, is used. The lack of the scientific information is now more and more obvious because of the necessity to transfer to the territorial and environmental planning, to determine the environmental restrictions for the economical activity, to evaluate the volume and potential of the eco-systems and natural resources, as well as when the inter-sector questions are considered.

The considerable difficulties appear also because of the lack of the necessary investigations in the sphere of the high technology, equipment and methods of forecasting and management of the environmental risks.

After the collapse of the Soviet Union the scientific researches are not supported any more at the same level as it was before. The main scientific centers, which formed the scientific basis for the environment policy, and fundamental research works in the sphere of the environment and development remained in Russia. In spite of the fact that the scientific centers and institutes, located

in the Central Asia, tried to continue the research work it became more and more difficult to do it without the support of the state. Small grants, given by the state and donors' programs were directed mainly to the short-tem investigations or for the work of the applied character.

A lot of legislative instruments and political strategies in the region define the necessity of the ecological education. It concerns the preschool, secondary, special secondary and higher education, as well as the specialist training. The ecological subjects are included into the programs of all educational institutions. But these educational institutions and the ministries of the environment protection are seldom collaborate at the level of the joint programs in action. As a rule, such interaction is carried out in the form of separate workshops and projects supported by the donors.

In accordance with the legislation of many countries the ecological education is obligatory for all managing persons and specialists working in the spheres that influence negatively the environment. At the same time actually it is not observed.

There is almost no centralized system of the personnel training. The system of the personnel training and the refresher courses that existed in the time of Soviet Union, but the efforts of the ministries of the environment protection in order to support such systems were not sufficiently supported by the state. As a result of it the former system fell to separate courses or one-off workshops conducted in the frameworks of small and short term donors' projects. In particular the economists, auditors, data managers and lawyers lack the training in ecological management.

Recommendations:

- *The creative potential of the scientists, engineers of the region is to be integrated in such a way that it could be used in full;*
- *To unite the efforts of the scientists in order to carry out the complex inventory of the condition of the natural resources and environment as well as to fix the ecological frameworks for the economical or other activity in the region and the most acceptable, from the point of view of the eco-system preservation, economical strategies;*
- *To establish the public Council of the well-known persons and scientists of the region in order to support the efforts of the Central Asian countries for the preparation and implementation of the regional strategy of the stable development;*
- *To restore the system of the specialists training and refresher courses, to implement the system of the continuos ecological education.*

VIII. ORGANIZATIONAL MECHANISMS AND INTERNATIONAL COOPERATION

1. Programs and strategies

In accordance with the international obligations the countries of the region began to develop and implement the following strategic, program and review documents in the sphere of the environment protection and stable development:

- The National Environmental Action Plan (NEAP) – Kyrgyzstan (1995), Kazakhstan and Uzbekistan (1998). The process of the development of the NEAP comes to the completion phase in Turkmenistan;
- The National Strategy and Action Plan for the Preservation and Balance Use of the Biological Diversity - Kyrgyzstan, Uzbekistan and Kazakhstan (1998);
- National Action Plan for the Desertification Control - Turkmenistan (1996), Kazakhstan (1997), Uzbekistan (1999), Tajikistan (2000);
- National Action Plan for the Environment Hygiene – Uzbekistan (1998), Kyrgyzstan, Kazakhstan, Tajikistan (1999);
- National Program and Action Plan For The Termination Of The Use Of The Ozone Destructive Substances – Uzbekistan (1998), Kazakhstan, Tajikistan (2000);
- National Strategy For The Decrease Of The Greenhouse Gas Emissions – Uzbekistan (2000), National reports on the decrease of the greenhouse gas emissions – Kazakhstan, Uzbekistan (1999);
- National Conception of the Stable Development (Uzbekistan, 1998) and Strategy of the Stable Development – Kyrgyzstan (1997), Uzbekistan (1999), Strategy of the Long Term till 2030 – Kazakhstan (1998).

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Strategy of the stable development					
1992	-		-	-	-
1993	-		-	-	-
1994	-		-	-	-
1995	-	NEAP	-		
1996	-	-	Government program of the ecological education and training of the population;	National Action Plan for the Desertification Control	-
1997	National Action Plan for the Desertification Control	National Strategy of the stable human development; Conception of the environmental safety of the KR	Government Ecological program for 1998-2008		National report Rio+5
1998	NEAP/SD	Strategy and Action Plan of the Biodiversity Preservation	-		National Conception of SD; National Report on the CSD UN – 7; National Action Plan of the Biodiversity Preservation; National Action Plan for the Environment Hygiene; National Action Plan For The Termination Of The Use Of The Ozone Destructive Substances
1999	The National Strategy and Action Plan for the Preservation and Balance Use of the Biological Diversity	+	National Action Plan for the Environment Hygiene	Government Commission for the fulfillment of the obligations of Turkmenistan in respect of the Conventions and programs of the UN in the environment sphere; "Potential 21" Project	National Strategy of the SD; Project of the National Agenda – 21; National Report on the CSD – 8; National Action Plan for the Desertification Control; National report of the RU on RCIC; National strategy on the decrease of the greenhouse gas emissions
2000	National Program For The Seizure Of The Ozone Destructive Substances	-	National Plan-Program For The Termination Of The Use Of The Ozone Destructive Substances; National Action Plan for the Desertification Control;	Preparation of the NEAP; Preparation of the National Review of the SD for RIO+10;	National Report on the CSD – 9; National Report "Millenium - 2000" Measures program and National Statement for Rio+10

To accede to and to ratify the International Legal Documents in the sphere of the environment and development is a very important component of the fulfillment by the countries of the CAR of its obligations before international community. At present all five countries of the region have signed and ratified the following documents: The Convention of the Biological Diversity, The UN Framework Convention Regarding the Climate Change, Convention for the Desertification Control.

Kazakhstan, Tajikistan, Turkmenistan and Kyrgyzstan ratified the Arhus Convention regarding the access to the data, public participation in the decision making and access to the justice in respect of

the matters concerning the environment and health. Uzbekistan is planning to accede to this Convention. The only country in the CAR, which acceded to the Convention of the environmental impact assessment in the transboundary context is Kyrgyzstan. The parties under the Ramsar Convention and CITES Convention in the region are Kazakhstan and Tajikistan, under the Vienna Convention "Regarding the Ozone layer Protection", Montreal Protocol "Regarding The Ozone Destructive Substances» and London Amendment to the same – Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan (Copenhagen Amendment was ratified at the same time as London's in 1998). Turkmenistan and Kyrgyzstan ratify the Basel Convention regarding the control under the transboundary transportation of the dangerous wastes and its disposal. Uzbekistan acceded to it in 1996.

The ratification of the International Conventions in the countries of the CAR shows that the region tends to become a plenipotentiary member of the world community observing the norms of the international legislation in the sphere of the stable development and accordingly reforming the current legislation in accordance with the international legislation.

At the same time it is obvious that it is necessary to take own regional convention regarding the matters of the ecological safety and stable development. In the Almaty Declaration, accepted in 1998, the heads of the states of the region declared about the intention to prepare such Convention and general Strategy for solving the development problems. The support and experience of the international organizations is necessary to implement these intentions.

National Statistics					
	Kazakhstan	**Kyrgyzstan**	**Tajikistan**	**Turkmenistan**	**Uzbekistan**
Ratified conventions and corresponding protocols regarding the environment and development					
1992	-	-	-	-	-
1993	1	-	-	-	4
1994	5	-	-	1	-
1995	6	-	-	2	5
1996	6	-	1	-	1
1997	7	-	3	3	1
1998	9	-	1	-	3
1999	9	7	-	1	1
2000	18	7	2	11	For the period total:15

2. Integration into the "Environment for Europe" Process and Asian-Pacific Region Program

The "Environment for Europe" process, which was begun in 1991 with the acceptance of the Action Plan regarding the environment protection played a very important role for the countries of the region that for the first time entered into the international collaboration process. The participation of the region was supported by the resolutions of the conferences in Sophia (1995) and Arhus (1998). In particular in Arhus the decision of the countries of the region to begin preparation of the sub-regional program of the environment protection (SRPEP) was supported. The process of NAPEP represented a very important phase, which began in the most countries of the region and allowed shifting from the universal and non-realistic programs to the priority actions and active work with the donors on this basis. At present the counties of the region take an active part in the program for NNG for the 2002 period.

At the Arhus conference, where the countries of the CAR participated at the same positions the « re-orientation « of the «Environment for Europe» processes and donors' aid into the direction of the NNG requirements.

For the last years the process of the entry of the CAR countries into the ESCATO Programs, such as SPECA (EEC-ESCATO), Special Program for the Central-Asian Countries (SPCAC). At the meeting regarding the regional environmental collaboration in the Central Asia, taken place at Teheran under the aegis of ESCATO UN (February 14-16, 2000) it was confirmed that it is necessary to solve the foreground regional environment problems taking into consideration the national priorities of the CAR countries.

At the meeting of the Ministers of the Environment, which took place in September 2000 in Japan, the agreement to start actual actions in this direction was achieved. At the same time. The entire entry into the process requires the countries to carry out the institutional reorganization, to complete the necessary economic reforms, and to prevent the direct risks for the environment. It will require the considerable efforts and investments when deciding the foreground regional problems.

The characteristic feature of the modern development of the region is the tendency of the countries to integrate into the global economical space as well as to collaborate with the European and Asian regions and within the sub-region. The solving of the questions concerning the development of the social economical development are based on the Treaty of the Integrated Economic Area concluded between the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan and Republic of Uzbekistan – "The Central Asian Economic Community" (CAEC) by the heads of these countries.

The main goal of the "Strategy of the integration development of the CAES for the period up to 2005" is the focusing of the efforts of the member states on the priority directions of the economical interaction: to stir up the trade-economic ties through the regime of the free-trade; to develop and implement the joint deeds aimed at the improvement of the environment in the region; to develop the direct economical ties, etc. At present in the frameworks of the CAES more than 80 agreements were completed in different spheres of the social-economical development.

One of the most important principles of the "Agenda for 21" is take into consideration the questions of the environment and development in the process of the decision making. The Governments faced the task to find the integrated methods of the management that would cover the economical, social and environmental factors in complex.

For the last period in the Central Asia the organizational basis for the joint actions in order to solve the problems of the social-economical development and environmental provision was formed. In order to strengthen the regional collaboration regarding the decision of the ecological questions and to take into account the interests of the water use of the independent republics several interstate organizations were established.

There is a net of the organizations able to provide the basic services concerning the regional management of the water resources and environment. This is the International Foundation of the Aral Sea Rescue (IFAR) with the branches in all countries all over the world.

After the reorganization the IFAR included the Stable Development Commission (SDC) that coordinates the environment protection and stable development programs in the region. The SDC Action Plan up to 2002 was developed and accepted, and its implementation will allow to stir up the region actions in the sphere of the development and environment.

By the decision of the conference of the ministers from 52 states of the region EEC UN (Arhus, 1998) in order to strengthen the collaboration between the states, communities and business in the region and in order to solve jointly the environmental problems and problems of the stable development the Central Asian Regional Ecology Center (CAREC) was found.

Every state of the CAR has its executive bodies, such as ministries or governmental committees for the environment protection, formed in the common former soviet system. The financial aid of the international organizations played a very important role in the strengthening of their potential.

After the Conference Rio-92 the process of the formation of the Commissions (Councils) for the stable development has begun, and these bodies are to ensure that the country will take an active part in the decision of the questions regarding the stable development of the region and world community, in improvement of the inter-departmental coordination of the actions when implementing the plans of the practical actions.

In 1995 in the Kyrgyz Republic the National Council of the Stable Human Development was formed, the Conception of the stable human development was developed. Beginning with 1995, by the appropriate decisions of the Government of the Republic of Uzbekistan the National Commissions for the problems of the climate change and termination of the use of the ozone destructive (1995), for the desertification control (1996) and bio-diversity preservation (1998) were formed; in 1997 the National Republic Commission for the Stable Development was formed (NRCSD).

The analogue inter-sector commissions by conventions were formed in the Republic of Kazakhstan with the common labor body – National Ecological Center of the Stable Development and the Center for the Climate Change at the Ministry of the natural Resources and Environment Protection (with the support of UNDP, USA).

In Kazakhstan (1997) and Tajikistan (1998) the National Council for the stable development and National Commission for the stable development were found, but as the its tasks and the priorities were not understood in full these structures did not influence much the process of the decision making in the sphere of the stable development. In Turkmenistan by the Resolution of the President in 1999 the State Commission was formed in order to ensure the obligations of Turkmenistan, arising from the Conventions and UN Programs regarding the environment.

The legal and institutional is in the process of transformation. In accordance with the decisions of the Interstate Council of the Central-Asian Community (Kazakhstan, Tajikistan, Kyrgyzstan, Uzbekistan) it is planned to declare the region the free trade area. Than it is planned to create the customs, payment and exchange union in the direction of the common market of the Central Asia. The accepted Strategy of the integration development till 2005 and the Program of the primary actions to form the united economical area will contribute to the equalization of the levels of these states' economic development.

To achieve this goal the Central Asian Bank of the Collaboration and Development was established and at present it finances 50 joint projects.

One of the topical tasks for the Central Asian Countries is to develop the long term state policy aimed at the decision of the strategic and current tasks of the social – economical development and solving of the environmental problems. There are all the necessary prerequisites for the integration.

With the support of the UNEP, UNDP and ADB the implementation of the Regional Environmental Action Plan (REAP) has begun. The special working group of the officials from the representatives of al Central Asian countries was formed.

The regional collaboration of the Central Asian Countries in the sphere of the environment protection will serve as a future basis for the collaboration in the sphere of the stable development of the region.

IX. INFORMATION FOR THE DECISION MAKING

The system for the decision making in the sphere of the environment protection in the region is a special object for the discussion. The multilateral agreements and regional conventions, the Arhus convention including, offer the concrete mechanisms for the improvement of this system. It can be declared that the system of the decision making in the sphere of the environment protection reflects the modern level of the development of the public relations and at the same time represents the independent goal. It represents not only the public understanding of the ecological factor role but also the level of the participation in the decision making of the main sectors of the community – governmental and local authorities, NGO and business, international and regional organizations.

The countries of Central Asia are on a way of construction of such systems. The decisions making mechanisms, inherited from soviet system, focused basically on escalating of industrial potential and based on command economy, did not allow to take into account in a due measure interests of the population and environment, created obstacles for the future development. The integrated approach in planning economic activity, the realizations of the projects and programs for sustainable development, management of Eco-systems should be based on adequate system of acceptance of the decisions, which is in turn based on the accessible and authentic information, scientific researches and analysis, forecasting and examination, account of opinion of the interested groups and interdepartmental interaction.

The statistics used in region and created in basic for a command economy in the system of the former Soviet Union, covers a plenty of parameters on a condition of an environment, influence and measures which are carried out at a level of the enterprises and organizations. However these parameters not always correspond to national priorities and international requirements. Besides the statistics data are formed by various departments and ministries and not always are easily accessible to all interested.

The monitoring system has the rather ramified network, legal and normative, organizational and material basis. But as a result of reduction of state financing and reorganization the monitoring for last years does not satisfy to the modern requirements and requires strengthening. Besides the monitoring is carried out by various services and there are complexities of the tax and reception of all monitoring data in one place.

The reports, publication, the bulletins recently have received a wide circulation. The ministries responsible for environment protection, publish the annual reports about environment situation and accepted measures. The environmental NGOs also give this direction large attention. In Central Asia are regularly issued with support of donor organizations the bulletins and newspapers on illumination of activity in the field of the conventions both other programs and projects. At the same time, all experts of the countries mark insufficiency of the distributed information. The state bodies have not the sufficient budgets on their edition of large circulation's, and the practice, existing in some countries, of sale of the bulletins or reports does not allow scientific and public and other interested organizations to have to such information an easy approach.

In the countries of Central Asia there were no uniform information databases, where it would be possible to receive freely information on sustainable development. The existing databases are dispersed on various ministries and organizations, including international, not always have opened character and sometimes contain the inconsistent data. The database on water resources created with support ÒACIS and other international organizations in CRC Ì ÊÂÊ carries the closed character. Created nowadays under the decision of ICSD in CAREC the database on sustainable development should receive development and support from the countries.

The common problem for the region is the limited access to Internet and inaccessibility of a wide public to ecological sites both national, and international structures.

National Statistics

	Kazakhstan	**Kyrgyzstan**	**Tajikistan**	**Turkmenistan**	**Uzbekistan**
Access to inform ation (Arhus convention)					
Number of environmental sites					
1997	-		-		
1998	1		-		1
1999	12		-		
2000	13		-		
Number of ecological editions on environment and SD					
1992	4	-	-	1	
1993	4	-	-	1	1
1994	4	-	-	1	-
1995	4	-	-	2	1
1996	4	-	-	2	1
1997	4	1	-	3	
1998	5	2	-	4	
1999	5	2	-	5	
2000	6	-	-	5	3 state editions

Recommendations:

- *The people should be completely informed rather paradigms of development to accept the own approach to development;*
- *To create national and subregional integrated information system on environment protection and sustainable development on the basis of common ideology;*
- *To study a condition of existing information systems and databases in the field of an environment protection, their acceptability for the persons accepting the decisions to carry out inventory of all available databases and to ensure its publication;*
- *The complete system should be based on renewal environmental monitoring of air and water, should be extended the monitoring of protected territories. The information system should include regular distribution of the reports about a condition of an environment, on a paper and on Internet*.
- *To develop strategy on interaction and information interchange between state, local organizations, NGOs, business and science,*
- *To study possible mechanisms of distribution of the information in view of the existing communications and technologies, and also level of the consumers of the information; to develop at a legislative level the mechanism of the public participation on all or major stages of acceptance of the decisions;;*
- *To promote development of a network of libraries with an easy approach to the environmental information;*

Used materials

1. State Environmental Program of Republic of Tajikistan. Dushanbe, 1997.
2. The state reports « the ecological condition of an environment of Republic of Kazakhstan ». Ministry of environment and bioresources. Almaty, Kokshetau. 1997-2000.
3. The state reports on a condition and use of grounds of Republic Kazakhstan on January 1, 1998. Committee on management of ground resources of Ministry of an agriculture. Àkmola, 1998
4. The report on a condition of an environment of Republic Tadjikistan 2000 ã. Dushanbe, 2001.
5. Report «Common Country Assessment of Uzbekistan". UN, 2001.
6. Health of the population, service of public health services and hygiene of an environment in Republics of Central Asia. An information centre of WHO on health for Central-Asian republics. Bishkek. 1997.
7. Informative-analytical material about condition and use of water resources. Ministry of water recourses, Ministry of macroeconomic statistics, Tashkent, 2000.
8. Information database on sustainable development of Central Asia; CAREC; www.neapsd.kz/carec;
9. The information environmental bulletin. MNREP, Almaty, 1990 – 2000 ãîäû.
10. The complex environmental monitoring of high mountain systems of Central Asia. Bishkek, 1998.
11. The concept of ecological safety of Kyrgyz Republic. Bishkek, 1997.
12. Materials of the state account of wood fund on 01.01.1998 Àstana, 1998.
13. Materials of an advisory meeting of the ministers of economy / finance and environment protection of CIS on a water sector and investments. Àlmaty, 2000.
14. Materials of an international seminar " Vision of 21 century: water for food product production and development of an agriculture ". ILRI, IWMI, ÍÈÖ Ì ÊÂÊ. Tashkent, 17-20 àâãóñòà 1999ã.
15. National strategy on sustainable human development of Kyrgyz Republic. Bishkek, 1997.
16. National strategy of sustainable development of Republic of Uzbekistan. NCSD RU, 1999.
17. National Strategy and plan of actions on preservation and balanced use of a biological variety of Republic Kazakhstan. Kokshetau, 1999.
18. National Strategy and Action Plan n preservation of a biovariety. Uzbekistan, 1998 ã.
19. The national report on environment condition in Republic of Kyrgyzstan for 1997-1999 years.
20. The National Environmental Action Plan of Kyrgyz Republic. Bishkek, 1996.
21. The National Environmental Action Plan. Uzbekistan, 1999 ã.
22. The National Environmental Action Plan and Sustainable Development. Republic of Kazakhstan (1999).
23. The national action plan on hygiene of an environment (NAPHE) of Republic Kazakhstan. 2000.
24. The national action plan on hygiene of an environment (NAPHE) of Republic of Uzbekistan.
25. National reports on human development in Kazakhstan for 1995-2000 ÀLmaty, 1995-2000.
26. The national report on human development in Turkmenistan. Ashkhabad, 2000.
27. The national reports on human development in Uzbekistan for 1995-2000 Tashkent,1995-2000.
28. The review of productivity of ecological activity. Kyrgyzstan (EPR Kyrgyzstan). 1999
29. The review of productivity of ecological activity. Kazakhstan (EPR Kazakhstan). 2000.
30. About a condition of protection of atmospheric air in Republic Kazakhstan. State committee of Republic Kazakhstan on statistics and analysis. Àlmaty. 1990-1999.
31. The report of a Regional meeting behind a Round table of Central and Southern Asia. Bishkek, July - August 2001.
32. Problems of development of deserts, Institute of deserts, Ashkhabad, 1995-2001.
33. The regional Report " Testing of indicators of sustainable development of the Aral sea ", UNDP, 2000.
34. Condition of an environment in Turkmenistan. Ashkhabad, 1999.
35. Condition of an environment in the countries Central Asia. - Electronic reports on a disk (regional working group, UNEP-GRIDA, 1999) ; www.grida.no/
36. Central Asia: The environment and development. - Electronic report on compact a disk (UNDP/UNEP-GRIDA, 1999); www.grida.no/
37. Central Asia: Environmental Assessment. Prepared by the Regional Working Group of the Central Asian States. Fourth Ministerial Conference Environment for Europe, Aarhus, Denmark, 23-25 June 1998 Background Document, UN Economic Commission for Europe.
38. Economic and Social Commission for Asia and the Pacific Ministerial Conference on Environment and Development in Asia and the Pacific, 2000, Preparatory Meeting of Senior Officials, 31 August--2 September 2000, Kitakyushu, Japan.
39. Interim Poverty Reduction Strategy Paper, Government of the Republic of Tajikistan Developed by the Working Group Created Based on the Order of the President of the Republic of Tajikistan on March 24, 2000 Dushanbe – 2000.
40. World Summit on Sustainable Development (WSSD) - website: http://www.un.org/rio+10