JOHANNESBURG SUMMIT 2002

KAZAKHSTAN

COUNTRY PROFILE

UNITED NATIONS

INTRODUCTION - 2002 COUNTRY PROFILES SERIES

Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, underscored the important role that States play in the implementation of the Agenda at the national level. It recommended that States consider preparing national reports and communicating the information therein to the Commission on Sustainable Development (CSD) including, activities they undertake to implement Agenda 21, the obstacles and challenges they confront, and other environment and development issues they find relevant.

As a result, in 1993 governments began preparing national reports for submission to the CSD. After two years of following this practice, the CSD decided that a summarized version of national reports submitted thus far would be useful. Subsequently, the CSD Secretariat published the first Country Profiles series in 1997 on the occasion of the five-year review of the Earth Summit (Rio + 5). The series summarized, on a country-by-country basis, all the national reports submitted between 1994 and 1996. Each Profile covered the status of all Agenda 21 chapters.

The purpose of Country Profiles is to:

- Help countries monitor their own progress;
- Share experiences and information with others; and,
- Serve as institutional memory to track and record national actions undertaken to implement Agenda 21.

A second series of Country Profiles is being published on the occasion of the World Summit on Sustainable Development being held in Johannesburg from August 26 to September 4, 2002. Each profile covers all 40 chapters of Agenda 21, as well as those issues that have been separately addressed by the CSD since 1997, including trade, energy, transport, sustainable tourism and industry.

The 2002 Country Profiles series provides the most comprehensive overview to date of the status of implementation of Agenda 21 at the national level. Each Country Profile is based on information updated from that contained in the national reports submitted annually by governments.

Preparing national reports is often a challenging exercise. It can also be a productive and rewarding one in terms of taking stock of what has been achieved and by increasing communication, coordination and cooperation among a range of national agencies, institutions and groups. Hopefully, the information contained in this series of Country Profiles will serve as a useful tool for learning from the experience and knowledge gained by each country in its pursuit of sustainable development.

NOTE TO READERS

The 2002 Country Profiles Series provides information on the implementation of Agenda 21 on a country-by-country and chapter-by-chapter basis (with the exception of. chapters 1 and 23, which are preambles). Since Rio 1992, the Commission on Sustainable Development has specifically addressed other topics not included as separate chapters in Agenda 21. These issues of trade, industry, energy, transport and sustainable tourism are, therefore, treated as distinct sections in the Country Profiles. In instances where several Agenda 21 chapters are closely related, for example, chapters 20 to 22 which cover environmentally sound management of hazardous, solid and radioactive wastes, and chapters 24 to 32 which refer to strengthening of major groups, the information appears under a single heading in the Country Profile Series. Lastly, chapters 16 and 34, which deal with environmentally sound management of biotechnology, and transfer of environmentally sound technology, cooperation, capacity-building respectively, are presented together under one heading in those Country Profiles where information is relatively scarce.

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LIST OF COMMONLY USED ACRONYMS

ACS	Association of Caribbean States
AMCEN	Africa Ministerial Conference on the Environment
AMU	Arab Maghreb Union
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CARICOM	The Caribbean Community and Common Market
CBD	Convention on Biological Diversity
CIS	Commonwealth of Independent States
CGIAR	Consultative Group on International Agricultural Research
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMESA	Common Market for Eastern and Southern Africa
CSD	Commission on Sustainable Development of the United Nations
DESA	Department for Economic and Social Affairs
ECA	Economic Commission for Africa
ECCAS	Economic Community for Central African States
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIDA	Foundation for International Development Assistance
GATT	General Agreement on Tariffs and Trade
GAW	Global Atmosphere Watch (WMO)
GEF	Global Environment Facility
GEMS	Global Environmental Monitoring System (UNEP)
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GHG	Greenhouse Gas
GIS	Geographical Information Systems
GLOBE	Global Legislators Organisation for a Balanced Environment
GOS	Global Observing System (WMO/WWW)
GRID	Global Resource Information Database
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IAEA	International Atomic Energy Agency
ICSC	International Civil Service Commission
ICSU	International Council of Scientific Unions
ICT	Information and Communication Technology
ICTSD	International Centre for Trade and Sustainable Development
IEEA	Integrated Environmental and Economic Accounting
IFAD	International Fund for Agricultural Development

IFCS	Intergovernmental Forum on Chemical Safety
IGADD	Intergovernmental Authority on Drought and Development
ILO	International Labour Organisation
IMF	International Monetary Fund
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IPCS	International Programme on Chemical Safety
IPM	Integrated Pest Management
IRPTC	International Register of Potentially Toxic Chemicals
ISDR	International Strategy for Disaster Reduction
ISO	International Organization for Standardization
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature and Natural Resources
LA21	Local Agenda 21
LDCs	Least Developed Countries
MARPOL	International Convention for the Prevention of Pollution from Ships
MEAs	Multilateral Environmental Agreements
NEAP	National Environmental Action Plan
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
NSDS	National Sustainable Development Strategies
OAS	Organization of American States
OAU	Organization for African Unity
ODA	Official Development Assistance/Overseas Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
PRSP	Poverty Reduction Strategy Papers
SACEP	South Asian Cooperative Environment Programme
SADC	Southern African Development Community
SARD	Sustainable Agriculture and Rural Development
SIDS	Small Island Developing States
SPREP	South Pacific Regional Environment Programme
UN	United Nations
UNAIDS	United Nations Programme on HIV/AIDS
UNCED	United Nations Conference on Environment and Development
UNCCD	United Nations Convention to Combat Desertification
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
UNFPA	United Nations Population Fund

UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNIFEM	United Nations Development Fund for Women
UNU	United Nations University
WFC	World Food Council
WHO	World Health Organization
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wildlife Fund
WWW	World Weather Watch (WMO)

CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES – TRADE

Decision-Making: The Governmental Resolution on "the requirements on drawing the information in national and Russian languages on labels of goods" was adopted in 1999, with the purposes of ensuring the rights of consumers on getting complete and reliable information, and for the protection of internal market against poor-quality imports. For a number of goods, mainly, consumer goods, listed in the Annex to this Resolution, any citizen of Kazakhstan has the right to get the following information in the national and Russian languages: the names of the goods, country and manufacturer, date of manufacturing, application time, conditions of storage, ways of application, and food value. The State Standard measures on the control for import of goods with expired application time or representing danger to the environment have been made tougher.

Programmes and Projects: No information available.

Status: Foreign trade turnover (on the basis of data of customs statistics taking into account data on unorganized trade) from January to September of 1999 has recorded 7,485.6 million USD, including export of 3,708.2 million USD, and import of 3,777.4 million USD. As a whole, for the main export nomenclature for January to August of 1999 in comparison with the same period in 1998, the analysis of the price and quantitative deliveries shows a decrease in the cost of export by 25%. The rates of import decrease for the first 9 months of 1999 exceeded the rates of export reduction. It is connected to the rise in the cost of import equipment, transport, and reduction of volumes of food imports, all related to the restrictions on foreign trade adopted during 1999. Noting the beginning growth of world prices of raw materials from the second half of 1999 and taking into account the devaluation factor, promoting decrease in the production costs at the expense of reduction of prices in the structure of the cost price of industrial production of material inputs, it is possible to predict a positive influence of these factors on the increase of the level of competitiveness of Kazakhstani production in the world commodity markets and opportunity of enhancing the use of the export potential of the country.

Export of grain among total exports takes up about 5-7 %. Production of grain in Kazakhstan, depending on climatic and weather conditions, as well as technical equipment of agricultural producers, varies on the average from 7 to 17 million tons a year. This year grain yield has made up about 12 million tons, which is 1.5 times more than the indicators of the previous year. In 1999 the share of Kazakhstan in the world volume of grain production can increase up to 1.7 %. About 90% of grain in Kazakhstan is annually exported to the Commonwealth of Independent States (CIS) countries. The Russian Federation is traditionally the basic importer of Kazakhstani wheat. Volumes of oil and associated gas production during the first 10 months of 1999 (oil 21.9 million tons and gas condensate 2.6 million tons) has shown a growth rate pf 112% for the same period of the previous year. Among the CIS countries Kazakhstan is the second greatest oil manufacturer after Russia, and among 90 countries of the world community, Kazakhstan is included among the top 30 countries. Production of metal ores has not reached the level of the previous year. The basic consumers are metallurgical industrial complexes of Russia and China. On reserves of iron ore Kazakhstan occupies the eighth place in the world. Kazakhstan occupies the tenth place in the world on production of iron ore, which share is more than 80% of the total. The production of non-ferrous metallurgy such as rare metals and affinaged gold is reduced, but that of zinc, lead and refined copper is increased.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: At the moment in Kazakhstan the official Website on trade is absent. Only generalized data on the economic situation in Kazakhstan, published in Internet by the Republican State Enterprise "Kazinvest" are available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: Kazakhstan by virtue of the geopolitical situation, as the large transit state on the boundary of two continents, cannot remain isolated from global economic processes. In this connection it is very important to support and develop cooperation with basic countries—trade partners of the country, to improve the forms and methods of internal macroeconomic policy and foreign trade activities.

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CHAPTER 3: COMBATING POVERTY

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS – ENERGY

Decision-Making: The Ministry of Energy and Mineral Resources is the central executive body of the Republic of Kazakhstan, responsible for the management of issues in the sphere of energy and mineral resources. The Ministry: develops and organizes the energy policy implementation; develops strategic plans of development of the state fuel and energy complex and its balance; implements such plans; and initiates development and implementation of the state policy in the energy-saving sphere, utilization of renewable and no conventional energy sources. Coordination between different governmental bodies on energy and energy aspects of atmosphere is obtained through: assistance to the organizations in attracting the potential investors and investment projects implementation (e.g. building, reconstruction of energy sources and electricity supply network objects) in collaboration with interested ministries and departments – RK Agency on Investments, Ministry of Economic and Trade, Ministry of Finance. The Ministry, in cooperation with the Committee of the State Property and Privatization, participates in conducting the policy of effective management of the state assets and organizes the privatization programme; finding solution for the environment protection issues as the result of energy enterprises activities is implemented in cooperation with the Ministry of Natural Resources and Environment Protection. It also participates in the development and implementation of the state and economic programmes, in cooperation with the Ministry of Economic and Trade. The Ministry also develops and implements the tariff policy in cooperation with the RK Agency on natural monopoly, competition protection and small-scale business support.

The Law of the Republic of Kazakhstan on "Power Industry" sets legislative, economic and organizational basis for the state policy in the areas of production, transmission, distribution and consumption of electric power, electric and thermal energy. The Law of the Republic of Kazakhstan on "Energy-Saving" regulates the public relations in the energy-saving sphere with the goal to establish economic and organizational conditions for effective use of the fuel and energy sources of the Republic of Kazakhstan and environment protection.

Programmes and Projects: According to the article 7 of the Law of the Republic of Kazakhstan on "the state support of the direct investments" for effective implementation of the investment project, the RK Agency on Investments can grant immunities from income taxation for the period up to 5 years from the moment of receiving the taxable income, but no more than 8 years from the moment of conclusion of a contract. Discounts from railway tariffs are applied for the coal transfer. NGOs and project institutes constantly send their proposals on production optimization, reduction of emissions and spills to the environment, development of the renewable energy sources and other, to the Ministry and corresponding mass-media bodies, which are taken into account by the Ministry in the development of the corresponding programmes. Programme of the Power Industry Development up to 2030 covers all the aspects of the RK Power Industry Complex development. Nowadays, energy organizations are engaged in the energy-saving issues in the framework of the regional programmes of energy saving. New state programme of energy saving and reduction of greenhouse gases emissions is under development.

Status: The share of energy enterprises in the environment pollution is rather large. These mainly electric power plants operates on fossil fuel and are the main sources of ambient air, water and soil polluters. Solving the major issues in the field of ecology and the environment protection is possible through the improvement of the environmental pollution monitoring system at the energy enterprises; the modernization of the existing plants; the rationalization of the energy use, use of renewable energy resources and nontraditional environmentally clean energy resources (the share of solar, wind and thermal water energy in the Republic is about 0,02%); the introduction and enhancement of the recycling water supply system; and the establishment of the economic mechanism to stimulate appropriate allocation, storage, burial and utilization of production wastes (liquid, vapor, solid) notwithstanding the form of property of an enterprise. Over 80% of Energy Producing enterprises are privatized. Enterprises of the coal-mining industry are 100% privatized. The country coordinates their activities by review and approval of the annual industrial programmes of the enterprises, controls their activities in accordance with the RK legislation. Part of the thermoelectric power stations in Kazakhstan power industry amounts to 90%, mainly - they are coal stations. On various energy sources: coal resource amounts to 36,6 billion tons; hydro potential amounts to 62 billion kilowatt p.h.; gas resources of the minor deposits and oil gas are valued at 2380

billion $m.^3$; construction of the wind power stations with total capacity over 2000 Megawatt is possible. Kazakhstan reviews possibilities for use of coal as raw material for production of motor fuel, coal fuel chemistry products and etc.

Electricity in Kazakhstan is available to all consumers if they pay for it. In accordance with the Electric Energy Development Programme, it is planned to modernize by 2030 the obsolete equipment at the Coal Power Plants and transfer them to clean technologies. Until 2005, it is planned to construct several gas-turbine power stations. Energy production structure up to 2020, by different types of power plants is planned as follows: Heat Power Plants (HPP) on coal - 66,8%; HPP on gas- 21,2%; Hydro Power Plants - 11,2%; Atomic Power Plants- 0,6%;Wind Power Plants- 0,2%.

Capacity-Building, Education, Training and Awareness-Raising: The public is being informed through mass media on major coal energy development issues in the framework of social partnership process.

Information: There is a need for normative documents portfolio, which would regulate investment, tax and tariff policy for stimulating the energy saving process, development of clean coal technologies and renewable energy sources.

Research and Technology: Presently, the clean coal technologies, due to the lack of investments, are not well developed. Construction of new energy sources is planned with the use of associated oil gases, renewable energy sources – hydro resources and wind energy, as well as some nontraditional energy sources.

Financing: Financial sources for energy projects: private sources; and external sources.

Cooperation: In 1992 Kazakhstan signed the UN Framework Convention on Climate Change (UN FCCC) and ratified it in 1995. Kazakhstan signed the Kioto Protocol on March 12, 1999. In 1999 the Ministry of Foreign Affairs of the Republic of Kazakhstan sent a note to the UN CFFF Depositary about the intention of the RK to join ANNEX I of the UN CFFF. In frames of the agreements, achieved during the Sixth Session of Kazakhstan-USA Joint Commission, April 15, 2000, Astana, a Joint Kazakhstan-USA Statement was signed on cooperation in the field of climate change prevention. On March 15, 2000 in Astana, the Ministry of Natural Resources and Environmental Protection of the Republic of Kazakhstan and US Agency for International Development signed Memorandum on cooperation in the field of climate change issues and established Interdepartmental Coordination Center on Global Climate Change Issues.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS – TRANSPORT

Decision-Making: The Ministry of Transport and Communications is mainly responsible for this area, overseen by the Ministry of Economy and Trade. Local authorities are responsible for all issues that concern the development of their regions. Transport legislation includes the bases of the Civil codex of the Republic of Kazakhstan, Law "On transport in Kazakhstan", President's decree on "Usage of air basin and aviation in the Republic of Kazakhstan", international agreements ratified by the Republic, other legislative acts.
There are legal documents that regulate transport emissions. For railway transport, the railway organizations pay for environment pollution, i.e. the emissions of the mobile sources (locomotives). Payment rates for atmospheric pollution are defined per one tone of fuel used. And the rates on environment friendly fuel are much lower. For water transport, the government follows UN/ECE Recommendations on internal water transport "Collecting works for the wastes produced by the vessels on European internal shipping routes" adopted in 2000. For civil aviation, the ad-hoc group recommendations related to the Committee of Environmental Protection on aviation impact are followed. The country is addressing the issue of environmentally clean transportation. Currently, the Ministry of transport and communications is developing a "Framework of the state transport policy of the Republic of Kazakhstan for 2001-2005". Within the framework of this strategy the international transportation routes will be developed and the effective national transport and communications net will be formed.

Programmes and Projects: The Ministry of Transport and Communications undertakes environmental protection activities according to the state environmental strategy as per the Law on Environmental Protection of 1997. The programme of the Republic State Enterprise (RSE) "Kazakhstan Temir Zholy" was worked out for the railway transport on issues of environmental protection for 1998-2005. In order to reduce the impact on the environment, the programme entitled "Technical policy of the RSE" for 2000-2014", includes activities on rolling-stock change, usage of more economic and environmentally clean diesel engines. In 2001 it was planned to put into operation an electrified way Otar-Almaty-2. All these measures are to reduce the pollution emissions to the atmosphere. The Ministry of Transport and Communications considers expedient to develop the Programme of integrated coordination of problems of environmental protection in a system "Human - Transport - Road - Environment ". The concepts and programmes that concern all the branches of the transport complex development are being developed for the period up to 2008.

Status: The total ship routes of general use in Kazakhstan length is 4 thousands km; the railways total 13,5 thousands km; airways total 50 thousand km; the total length of highways is about 88 thousand km, 18 thousand km of them are highways of the republic importance, including 12 thousand km - international highways. An effectiveness of roads use can be increased considerably if the conditions of the roads meet the international requirements. While 1999 a consumption of a diesel fuel by the diesel locomotives was more than 371 thousands tones, aviation fuel - 250 thousands tones and more than 60 thousands tones of diesel fuel for machines that are used for the roads construction. The total annual volume of the diesel combustion emissions from the diesel locomotives is more than 5 thousand tones.
Current problems in the transport sector include: lack of by-pass highways in some large cities cause gas, noise dust pollution; lack of road machinery plants, essential laboratory equipment, long distance location from the economic centres, insufficient financing of the transport branch; insufficiency of the departmental instructions, rules and regulations on maintenance of city roads and streets for industrial enterprises; violation of the technological features while using the construction and natural materials in road construction; lack of detailed environmental requirements; insufficient financing of the transport infrastructure, mainly the highways, leads to the bad condition of the roads net that increase the transport costs. This affects increase of the transport component in the general consumption goods cost. Social effect is on the migration from the villages due to the long distance from civilization, mortality increase in villages, infection diseases increase, food spoiling, lost crops, etc.

Capacity-Building, Education, Training and Awareness-Raising: Public awareness campaign on the impact of transport on the environment is provided from time to time through the mass media. Currently, the project "Improvement of the city electric transport in Kazakhstan" for the support of the Government of Japan, is being

considered in the ministries and agencies of Kazakhstan. The implementation of the project will contribute to increasing the effectiveness of the use of city electric transport system, to clean the air basin of the cities from the transport pollutants. The traffic rules are disseminated in schools through educational causes and research programmes as well as through the mass media. The government employees have had opportunities to attend some training courses.

Information: The data bank on traffic density of the transport on roads of the republican value is established. There is a statistical reporting on automobiles in the Republic of Kazakhstan. Within the framework of the project of the EC - TACIS "Support of policy on development of transit corridors in the Republic of Kazakhstan" it is planned to develop the transport database and forecasting. The information on transport emissions on roads is controlled on a sampling basis by special services. The electronic road signs and publicity boards can be established only on entries in large cities and on separate urban lines. The Internet is unavailable for these purposes yet.

Research and Technologies: The scientific-research institutes, Kazakh road scientific-research institute and others are active in the development of the transport complex of Kazakhstan development programmes. Creation of the algorithms and software on big-sized and overloaded transportation route optimization (due to the condition of the roads and bridges). The multimodule terminals are being constructed. The route scheme shipment is used at the railway transportation. The measures including foreign corporations on input of fast-track motion of passenger trains are carried out. Focus of other research and development include: tracking of accountable freights; radio communication equipment; motion of lorry convoys by strings; improvement of conditions of motion (increase of an operational condition of roads, organization of a traffic of the transport).

Financing: The sources of financing vary: for construction of an infrastructure include: state budget, private sources and external investments; for delivery of fuel - private sources; for research and development of fuel and efficiency of the transport - state budget, private sources; and for implementing a regulation and standards - state budget, private sources. In transport sector, the investments are predominantly made by international financial and economic organizations on conditions of external government loans and non-state loans under the state warranty implement. The greatest shares of the investments are on the road and railway branches. Increasing the volumes of the investments in road branch without participation of the State, is now regarded as an issue of the state road bonds. Besides the priorities in construction of new highways are revised with the purpose of engaging straight lines of the foreign investments with the subsequent creation of paid segments of roads. In such branch of natural monopoly, as a railway transport the processes of commercialisation and de-monopolization of branch are started by emphasis and allocation of the not basic productions and social sphere. In these conditions the share of participation of the state in firms of the given branch will be steadily reduced. The share of the private companies and joint ventures on the competitive basis will be accordingly increased. Such transformation will open many new capabilities for engaging diverse alternate forms of the investments without participation of the state, capability of the issue by the basic firm RSE "Kazakhstan Temir Zholy" in close correlation with large international banks, euro obligations and their arrangement on large securities markets, that will enable to invest means in a fixed capital of firms at the expense of their own potential, and also to interact with IFEO on engaging the grants and loans on technical assistance.

Cooperation: The Republic of Kazakhstan has signed 124 agreements in the field of the transport, 86 have come into force on transport issues covering: motor transport (35 agreements signed, 6 have come into force); water transport (10 agreements signed, 6 have come into force); railway transport (21 agreements signed, 21 have come into force); air transport (39 agreements signed, 26 have come into force); transit (6 agreements signed, 1 has come into force). Within the framework of bilateral cooperation, the Ministry of the Transport and Communications carries out an activity with the appropriate ministries on the transport and communications of the contiguous states (Russia, China, Iran, Turkey, Kyrgyzstan, Uzbekistan, Turkmenistan, Azerbaijan, Georgia). Kazakhstan is a member and undertakes cooperation within the framework of: the UN/ECE, ESCAP, the Commission for European Community (CEC), the International Maritime Organization (IMO), the International Civil Aviation Organization (ICAO), and the Organization for Railways Cooperation (ORC).

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CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH CONDITIONS

Decision-Making: The Ministry of Health and the Centre of National Environmental Activity Plan for Sustainable Development (NEAP/SD) are in charge of health related issues. The NEAP/SD Centre coordinates activities on collection and analysis of information in order to identify the connection between the rates of diseases and pollution. Ecological problems, projects and activities are discussed and priorities identified at the Republic Seminar.

Programmes and Projects: No information available.

Status: Health care remains a major issue in Kazakhstan. In 1995, every fourth person suffered from respiratory diseases. Most cases of respiratory diseases appeared in Almaty, Eastern-Kazakhstan oblast, Semipalatenskaya oblast and Karagandinskaya oblast where the level of emissions from transport, ferrous and non-ferrous metal industry was the highest and where nuclear bombs were tested. The highest concentration of tuberculosis was in Atyrauskaya oblast, Kyzylordinskaya oblast and Easter-Kazakhstan oblast where the quality of water is lower than normal. Half of the population suffered from cancer especially in regions where industry was located. The highest level of mortality was in Eastern-Kazakhstan oblast, and Northern-Kazakhstan oblast, where 13.6 and 12.1 people died per 1000 in 1995.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: Kazakhstan is ready to establish a National Cleaner Production Centre (NCPC) within the framework of the NEAP/SD Project approved by the Government. The NEAP/SD Centre is capable of serving as the nexus for research and dissemination of cleaner production processes for major industrial sectors. The NCPC will have a coordinating and catalytic role with regard to cleaner production. Activities cover four areas: in-plant demonstration, training, information dissemination, and policy assessment.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DEICISION-MAKING

Decision-Making: The Ministry of Ecology and the Centre of National Environmental Activity Plan for Sustainable Development (NEAP/SD) are in charge of integrating environment and development into decision-making. In accordance with the resolution adopted in 1996, and the provisions of the Concept of Environmental Safety approved by the Resolution of the President of the Republic of Kazakhstan dated April 30, 1996, the Coordinating Working Group (CWG) has carried out the preparatory phase of work on the NEAP/SD. This process was supported from NDP and the Harvard Institute of International Development (HIID). The CWG carried out a joint action plan on priority environmental problems involving ministries and departments, central and local agencies, and communities. In 1996, the Programme for 1997 was adopted at the Republican Conference, approved by the Government, and directed to all central and local agencies for implementation in 1997.

Programmes and Projects: A NEAP/SD Centre under the MEBR was established to formulate and implement the project, according to the Government Resolution and 1997 Orders, as well as agreements between the Government and international organizations on issues of the preparation and implementation of the NEAP/SD Project in Kazakhstan. The Centre coordinates activities of ministries and departments, local agencies, public organizations and business structures, international and other organizations to prepare and implement the NEAP/SD of the Republic of Kazakhstan. The Centre's targets are: Identifying environmental priorities for the Republic of Kazakhstan; Preparation and implementation of action plans (programmes and projects) to solve priority problems; Involving the public in the NEAP/SD preparation and implementation process (in cooperation with the Coordinating Working Group).

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: International support for sustainable development in Kazakhstan is provided through the following organizations: GTC, UNDP, World Bank, European Union, the Organization for Economic Cooperation and Development (OECD), HIID, the United nations Environment Programme/Global Resource Information Database (UNEP/GRID), and the United Nations Industrial Development Organization (UNIDO).

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CHAPTER 9: PROTECTION OF THE ATMOSPHERE

Decision-making: The National Coordinator on Climate Change is an interdepartmental coordination office to coordinate efforts within a state framework with all interested parties involved. In addition, the following establishments are responsible for regulating the air quality:

- Committee of Environmental Protection of the Ministry of Natural Resources and Environmental Protection (MNREP): policies and strategies, legal acts on environmental protection; definition of the maximum permissible of emissions; administrative supervision; monitoring and reporting at the state level; ecological expertise of objects of a state significance; organization of ecological training and education; overseeing the international agreements and introducing them into the state political and legal system.
- Department of Major State Inspection, MNREP: inspection to reinforce the law concerning the protection of air by sources of contamination; monitoring of the application of protective measures and observance of limitations on emissions of gas matters, as is stipulated in the maximum allowable concentration (MAC)
- Agency on Public Health Services: determination of MAC and protective sanitary zones around industrial plants; monitoring of their effects on health; determination of the size of sources of fumes and their physically dangerous effect; administers sanitary regulations.
- The Ministry of Internal Affairs: control of the emissions of exhaust gases and of road police activities.

The framework on Environment Preservation of Republic of Kazakhstan and the Law on Environmental Protection were adopted in 1996 and 1997, respectively, where the main rules about regulation of air were included. In the Republic of Kazakhstan the Law on Protection of Atmospheric Air was adopted in 1981. The protection of atmospheric air is controlled by the legal documents kept from the Soviet times. The most relevant of these include: *Classification of sources of air contamination; Method of definition of dissipating samples and calculation of density of a contaminant on boundary of sanitarian zones; Method of drafting on MPL; and Maximum permissible densities of contaminants in air.*

For the attenuation of hazard of a global thaw, the decrease in the level of contamination of atmosphere and reduction of volumes of wastes are indispensable:
1) Energy saving, reduction of a volume of burnt fuel.
2) Increase in usage of restored power sources: have a waterpower plant; and wind and solar power engineering.
3) Extension of the areas of CO2 absorbers, for the score of forests, recovery of fertility of soils and conclusion of the grounds from crop rotation, recovery and maintenance of pastures, wood massifs.
4) Adaptive measures including:

- Development and granting of the forecasts of appearance of the wreckers;
- Creation of centres on preservation of a gene pool of sorts summer and winter wheat;
- Fulfilment of the phito-forestry protective measures and agro-landscaping projects on improvement of inefficient grounds in arid and semi-arid zones;
- Water save measure;
- Support of development of sectors of economics using water resources;
- Measure on easing of negative consequences of effect of water resources vulnerability on sectors of economics.

The main purposes for achieving reduction of emissions of payload in Kazakhsta are: to reduce the consequences of the change of climate by limiting the human emissions payload; and to reduce the emissions of payload by the end of the decade to a level of 1990.
The non-governmental agencies participate in addressing the problem of climate change. The primary activity of a Kazakh NGO "Areket", for example, has received the official recognition of the Secretariat of the Convention on Climate Change.

Programmes and Projects: Emissions in Kazakhstan can be significantly reduced by a programme to increase the productivity of fuel on HES, salvaging emissions of associated gas further follows construction and introduction to maintenance wind electric stations (WES), a small hydroelectric station. Modernization of HES and construction of

small hydroelectric station in the present moment are the most feasible measures. In 1998, with the support of UNDP and GEF, the project "Development of Capabilities for More Effective Utilization of Energy in Supply warm and Hot Water in Kazakhstan" was prepared. The Strategy up to 2030 on Power-Engineering has selected river basins and their locales ideal for construction of a small hydroelectric station. The Ministry of Power Engineering, and Mineral Resources, the Ministry of Natural Resources and Environmental Protection and the Ministry of Education and Science Development for the Government Statement, jointly undertake an Energy Saving Programme and the development of non-conventional power sources. Kazakhstan has a significant potential of development of a wind power engineering. The development strategy of power engineering envisions construction large WES by general power 520 MWt. The potential of reduction of emissions at salvaging associated gas of oil extracting makes approximately 2,7 million tons of CO2 annually.

Status: Kazakhstan's level of greenhouse gases emissions is the worst in Central Asia. As a result of the slump in production in a transition period of Kazakhstan, it has lowered emissions volume of payload. The results of inventory showed that the emissions of payload in Kazakhstan for 1998 constituted about 65 % the level of 1990. Almost half was produced from the power sector, since the basic fuel in an energy balance of country is the coal. It is necessary to note that the reduction of emissions was accompanied in the country by significant negative social consequences: decrease of a standard of living, increase of a morbidity and death rate of the population.
The main absorbers of carbon dioxide emissions are the wood massifs, pastures and other green. Only about 4 % of the area of the Republic is forest covered. One million hec. of the forest area absorb approximately 0,48 thousand tons of CO2 annually. As a whole, it was necessary for the forest in Kazakhstan to absorb 4 million tones of greenhouse gases. The areas of CO2 absorbers are extended by the score of forests, recovery of the fertility of soil, recovery of long-term grassy and shrubby vegetation on grounds undergone degradation or removed from seed rotation, and resulting low of productive grounds from crop rotation, recovery and maintenance of pastures, wood massifs.

One of the main obstacles to reducing greenhouse gases emissions in the atmosphere in Kazakhstan has been the existing ineffectiveness of the institutional frameworks. Priority measures taken in reducing greenhouse gases emissions in Kazakhstan are: 1) Electro and heat energy production (through implementation of energy save policy; entrainment of restored power sources; increase of a share of natural gas); 2) Re-structuring of the industry, increase its energy effectiveness and entrainment of energy save technologies; 3) Salvaging of methane in coal mines; 4) Optimisation of animal industries, optimisation of usage of grounds, and development of ecological agriculture; 5) Extension of forest areas. It is necessary to clarify the link between the level of contamination of air basin of cities and greenhouse gases emissions - carbon dioxide and methane in industrial locales of Kazakhstan. Some parts of the East Kazakhstan area were damaged by nuclear-weapon tests conducted over 40 years, and the level of a common, oncological morbidity of the population, and also morbidity of breathe organs. The heightened contents of suspended matters, sulphurous anhydride, nitrogen oxides, phenol and formic aldehyde result in the development of severe pathological processes of breathing organs and the system of blood circulation. The health conditions of the population sharply deteriorated in the last decade and continue to worsen.

The main environmental issues of Kazakhstan relate to the emissions of contaminants into the atmosphere. The level of contamination of atmosphere of cities and industrial centres, despite of curtailment of production, remains rather high. The air contamination exceeds the standard in 11 cities. Most parasitic in the Republic are lead-zinc production in region of Ust-Kamenogorsk, lead-phosphate in Shymkent, phosphoric industry in Taraz and chromium firms of Aktyubinsk. Besides the industrial firms, most contaminated in connection with saturation, are the territories of the East Kazakhstan, Karaganda and Pavlodar areas. Development of old and mastering of new sources of raw materials have resulted in essential increase of air contamination of locale by hydrogen sulphite, mercaptans, the contents exceeds which one in regions of oil extracting in ten times MPL. The oil-producing firms continue to burn associated gas on plumes, polluting combustion products in the environment.

Capacity-Building, Education, Training and Awareness-Raising: Informing the public about climate change and awareness raising activities aimed at reducing the greenhouse gases, are periodically carried out through the mass media. Awareness-raising is needed to inform the effects of human activity on the environments, and on

global climate in particular. The Coordination Centre for Climate Change carries out training and learning seminars on a range of subjects like climate, legislative framework, etc. for the experts of governmental bodies, population, non-governmental organizations.

Information: The amount of anthropogenic emissions and drains of greenhouse gases are measured in Kazakhstan. The inventory of payload is undertaken by the Committee on Environmental Protection of the Ministry of Natural Resources and Environmental Protection. The collection of the indispensable data and subsequent regulation of emissions of greenhouse gases are carried out by the Ministry of Power Engineering and Mineral Resources, MNREP, the Ministry of Economy and Trade, the Ministry of Justice, the Ministry of Foreign Affairs, and also by the Agency on Strategic Planning.

Research and Technologies: For reducing greenhouse gases emissions, the technology of salvaging of associated gas on oil-fields with the subsequent liquefaction and transportation in tank cars was developed. The technologies for raising efficiency of a burning of low-grade coal are indispensable for protecting atmosphere in Kazakhstan. These include the use of renewable energy resources (wind, sun, hydro, biogas), energy saving technology in an iron and steel industry, technology on salvaging associated gas, mine methane, on processing of waste.
Since 1994 the researches in Kazakhstan have been focused on the following: the compilation of a national cadastre of human emissions (on sources) and drains (on absorbers) of greenhouse gases; the analysis of the vulnerability of major sectors of economics as well as the ecosystems; and the development of the guidelines for the implementation of adaptive measures to possible change of a climate; estimation of measures on the limitation of human emissions of greenhouse gases in different sectors of economic activities and the development of the guidelines for acceptance of national policy in this area; and the preparation of a national action plan.
The main reasons of a high level of air contamination in RK cities include: the obsolete "know-how" and ineffective refining equipment; mismatch of coal fuel to boiler aggregates, weak usage of restored and non-conventional power sources, and high energy consumption in municipal sector. The significant air contaminators of cities also are motor transport. Reasons of motor transportation contamination are bad maintenance of automobiles, poor quality of fuel, the use of the leaded petrol, backwardness of a control system of transport flows, low interest in environmentally friendly types of transport.

Financing: The lack of financial assets is an important problem. Means could be taken in monitoring the density of greenhouse gases in atmosphere and work out the strategies of reduction of their emissions. Foreign donors will be sought to address this.

Cooperation: National research on climate change in Kazakhstan between 1994 and 1998 years was conducted with the assistance of the American programme. Inventory of payload for 1994 year, and also the preparation and publication of the First National Message of the Republic of Kazakhstan on UNFCCC, were conducted with the assistance of the Netherlands programme in support of researches on change of a climate. A Kazakhstan-American joint statement on cooperation on preventing climate change was signed in 2000 within the framework of a joint commission. In the same year, a Memorandum of Cooperation was signed Astana between the Ministry of Natural Resources and Environmental Protection of RK and Agency of International Development of USA in the field of issue of climate change and the Interdepartmental Coordination Centre on global climate change has been created.
In 1992 Kazakhstan signed the Framework Convention on Climate Change (FCCC) and ratified it in 1995. Kazakhstan has signed Kyoto Protocol in 1999. It has ratified the Transboundary Conventions of UN/EEC. The other conventions ratified by the country include: the Convention on Access to Information, Participation of a Public in Decision-Making Process and Access to Justice on Problems, Tangent of an Environment (2000); Convention on Environmental Impact Assessment of an Effect in a Transboundary Context (2000); Convention on Transboundary Effect of Industrial Emergencies (2000); and Convention on Transboundary Air Contamination on Large Distances.

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CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: One of priority problems of the region is the degradation of pastures and arable lands. The degradation of pastures and vast haymaking proceeds. The area of haymaking here was reduced from 544,6 up to 410.5 thousand hec. One of reasons of productivity decrease is an offset and fall of toxiferous salts from former bottom of the Aral Sea. The analysis conducted in 1997 of environmental condition natural fodder grounds has shown, that as a whole on locale conditionally not changed natural fodder grounds are 48%. This category includes the flat pastures with zonal soils of a heavy mechanical structure, solonetz, salines, with halophytic, halophytic - wormwood and wormwood with the moderate vegetation experienced load. The degree of change in vegetation coverage depends on the utilization of the territory concerned. The territories that are intensively utilized require prime measures to recover of infringed grass.

The problems of oil contaminations are an outcome of not enough environmental control gear up. The rather tight ecological conditions in the region are connected to the activity on a complex of "Baikonur", where environmental services are powerless because of defects of the legislative bases. In the South-Kazakhstan oblast 130 major concerns pollute atmosphere with their emissions.

In deltas tugai forests perish having environment protective, forestry and recreation value, and being reserves for wild vegetation and animal world. Predatory usage of biological resources only aggravates a situation. In the beginning of the century 131 kinds of birds existed now kept no more than 30. In due course the Aral Sea was a large supplier of fish and was of a high value for the national economy. Since Syrdarya River was regulated, many kinds of original fishes have perished. One of most unique reserves on the island Barsakelmes, representing a wilderness ecosystem in environment of the sea has ceased to operate. The part of its fauna was transported in Almaty State Reserve and in Zaiiliyski National park.

The changes in environmental factors that have taken place in the last decade, have resulted in a significant increase of a morbidity of the population, especially by infectious and radioactive diseases. The situation is complicated by reinforced wearing of the fixed capital, impossibility to substitute obsolete, environmentally parasitic technologies, and also significant backlog of construction of environment objects because of extreme reduction of the state investments in total amount of investments directed to an environmental protection. Its specific gravity in a republican volume makes only 0.02 percents.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 11: COMBATING DEFORESTATION

Decision-making: Optimal policy and legislation on the forestry in Kazakhstan are coordinated by the Committee of the Forestry, Fishery and Hunting of the Ministry of Natural Resources and Environmental Protection of the Republic of Kazakhstan. The Committee has prepared the Comprehensive Programme on Sustainable Forestry, Wildlife and Specially Protected Areas development for 2001-2002. The Programme was submitted to the Ministries concerned for further approval by the Government. The drafts of the government regulations on the new rates on timber and new penalties for the forest damage were prepared. The development of a new edition of the Forest codex was included in the governmental plan on the legislation for the IV quarter of 2001.

According to the President's Decree in 1999 on "Refining Government Structure in Kazakhstan and Specification of their Competence", the functions in the forestry, fishery and hunting field were transferred from the Ministry of Agriculture to the Ministry of Natural Resources and Environmental Protection of the Republic of Kazakhstan. Upon the issuance of the Decree the status was identified and the measures on the government management, environment control and forests reproduction were drawn up. Currently, the forestry, fishery and hunting system is being reformed. The forestry management organizations were reorganized into 139 organizations on forest and wildlife protection and 16 republic government enterprises that were established in order to divide the functions of the government management. The organizations are entrusted with the activities on fire protection, illegal felling, pest and disease control, activities against poaching and also the issuance of the nature resources use permission.

Programmes and Projects: The main activities of the republic government enterprises are defined as fire-fighting, pest and disease control, nature bio-resources reproduction, increase of the ecological capacity of the forests.

Status: The total square of the republic forestry fund areas is 26,4 million hectares, including covered with forest – 11,4 million hectares that is 4,2 % of the republic square. The substantial part of the biodiversity is concentrated in the forests, including 70% of all high plants growing in Kazakhstan and more than 75% of animals.

At present the forests of Kazakhstan are influenced by the ploughing of lands around the forests, illegal felling and forest fires reduce the forest areas in the forest-steppe and mountain forest zones. The flood-lands forests are degraded as the hydrological river conditions were violated due to the regulation of the rivers. The saxaul forests are suffering from illegal felling. Steppe pine trees are depleted by the previous intensive felling. Total volume of the pine wood stock reduced for the last five years for more than 6,5 mln cubic m. According to the last data from the space photos, a half of all tape-forests are damaged by the fire.

The timber and other by-products processing was reduced in the last few years. During the previous years fire-fighting and pest and disease control were considered to be the most important issues for the Republic. In general, the damage from fire in the forests is considerable. As a study-case the following statistics could show the downward situation: for the period of 1975-1995 the square of 42,1 thousands hectares of forests, i.e. 2 thousands hectares per year in average. 340 thousands hectares were destroyed by fire during the last five years since 1995 till 2000, i.e. 56,6 thousands hectares per year in average. (In 1997 fire destroyed almost 230 thousands hectares of forests). The average square of one fire in 1997 was 105 hectares and in 2000 – 29 hectares.

The direct loss of timber is more than 1 billion tenge for year of 1997. In 1998 - 70521 thousands tenge, in 1999 – 86511 thousands tenge, and in 2000 – 107703,9 thousands tenge that is total of 1264,7359 million tenge for period of 1997-2000. The cost of forest renewal is more than 26 billion tenge.

Forest pests and diseases also have significant negative impact on the forest ecosystems and their sustainability. The pestholes are registered annually on the square of 40-140 thousands hectares. Lack of funds for forest protection activities resulted in the considerable loss of the forests. Since 1996 the square of area that needs to be protected has increased from 32,5 thousands hectares up to 163,4 thousands hectares in 2000.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: Kazakhstan does not participate in the international structures on forestry sustainable development indicators development. It does, however, take part in the Pan-European process, Montreal process, dry lands of Africa, the North American, the Near East, the Central America initiatives, Tarapotho offer, the international organization of the rain forestry and organization of the African forestry. In the frames of the sustainable forestry the Committee is currently working out the methodological base of the government forest cadastre, government wildlife cadastre and specially protected areas cadastre management.

Research and Technologies: No information available.

Financing: The forests of the Republic of Kazakhstan are in the exclusive government property. The costs of forest protection and other preventive activities are covered from the state budget. The forest fund is planned to be leased for 50 years in order to increase the interest of the private companies to be involved in the forestry development. A draft of the government regulations is currently submitted to the ministries concerned for the approval.

Cooperation: At present time Kazakhstan does not participate in the work of the inter-governmental professional group on forestry (IPF).

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CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

Decision-Making: The Ministry of Natural Resources and Environment Protection of RK develops a framework for combating desertification in the Aral Sea region, the most critical area suffering from desertification, economic decrease, migration, population health status and poverty. Within this framework the Ministry is planned to organize together with oblast and region akimats and local communities the complex activities on desertification reduction, pasture renewal, agriculture development, including stock-breeding production as an alternative to the traditional fishery. Due to this the economy on the local level will start developing, the level of poverty and population sickness rate will reduce, country people will not leave their villages for big cities to earn money. It is perspective to start such activities in other regions.

Programmes and Projects: Currently, a number of projects and programmes on combating desertification are undertaken within the frameworks of economic and agriculture development. The question of low-production virgin lands profitability is considerable, especially in the Central Kazakhstan. For example, the crop capacity in the southern regions of Karaganda oblast is 6-8 centres of wheat per one hectare while the profitability level is 10 centres from hectare. Therefore, from the last year in the Shetskiy region the project "Dryland Management" has been run under the support of the GEF and World Bank. It is planned within the project to restore 75% of the abandoned cereal areas by creating the seeding pastures and helping the farmers in the frames of market structure development and stock-breeding production increase. Also, the programmes on combating desertification on the Kazakhstan's territory are run under the grant support of UNDP/UNOPS, GEF, ABR, Governments of Germany, Switzerland, Finland and other international organizations and donor-countries.

Status: About 45,5 % of Kazakhstan's area are steppes, 50% are deserts, and their ecosystems are very sensible to the anthropogenic impact and can be easily destroyed as they have low renewal capability. Currently all administrative regions of Kazakhstan are involved in the process of desertification and there is a tendency for their acceleration. 179,9 million hectares of 272,5 or 66 % of total Kazakhstan's area suffer differently from desertification. Ploughing up of 40 millions of hectares of the steppes resulted to the loss of land fertility. The steppe soil lost 20-30% of humus, the droughts, hot winds and soil erosion became stronger. Overpasture and felling led to the plants degradation on the square of more than 70 million hectares, and reduced the stockbreeding production and biodiversity.

Desertification in Kazakhstan is a real threat for the sustainable development of the society, loss and depletion of the natural (soil), water, forest, pasture resources. This concerns increase of poverty and unemployment, decrease of environmental security and economic capacity of farming sector. Poverty, pollution and environment degradation increase the risk of people health, unstable economy, and leads to the over-consumption of the natural resources. Desertification is a problem that has environmental and social-economic consequences such as empty barns and granaries, famished cattle, and seeded fields covered by the coming sands. Therefore, desertification leads to great losses of economic resources. According to the prior calculation (UNCOD method) the loss from pasture degradation in Kazakhstan is US$963,2 millions annually. The missed profit from the tillage erosion is US$779 millions annually. The missed profit from re-salinity, swamping, etc. is US$ 375 millions. Annual damage from the humus loss is US$ 2,5 billions.

The desertification also negatively impact on several local human generation, i.e. birth and natality decrease, death and country people's migration increase. The natality of country people (12,2-7,9 for period of 1995-2000) is over the city people natality (2.6-1.8) in 6 times; as the ratio of city and country people is stable this implies the constant migration from the villages that is annually about 120 thousands people. This conclusion is confirmed by the decrease of the number of people working in the farming sector, twice during the four years – from 1,06 up to 0,49 millions people. Nature degradation reduced the environmental and productive security of the country, economic capacity of incomes and consumption, increased sickness and death rate, migration of population.

Information: The information on the progress of Kazakhstan on combating desertification is available to the public through the mass media, newspapers, magazines ("Kazecopravda", "New generation"), etc.

Research and Technologies: No information available.

Financing: Unfortunately, the support received from the international organizations and donor-countries has not been sufficient to cover all the territory of Kazakhstan that suffers from the desertification. The key ministries of RK (Ministry of finance, Ministry of economy and trade, Agency of strategic planning) should be involved and should allot finance from the state and local budgets for combating desertification in order to develop the economic sustainability of the villages.

Cooperation: The UN Convention to Combat Desertification has been ratified by the Republic of Kazakhstan in 1997. It is important to mention that among other environmental conventions this convention solves not only the environmental problems but social and economic such as poverty, health and migration of the population.

Currently Kazakhstan is participating in the active cooperation development at the global, regional and sub-regional levels. Kazakhstan is already a member of three Asian subject programme networks and partipates in the "Local initiatives development on CCD implementation". In 2000 the sub-regional programme on activities to combat desertification in the Aral Sea basin under the Central Asia countries' initiative has been launched. Currently the Republic of Kazakhstan leads the working group on the preparation of this document.

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CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

Decision-Making: The Ministry of Ecology and the Centre of National Environmental Activity Plan for Sustainable Development (NEAP/SD) are responsible for mountain development.

Programmes and Projects: No information available.

Status: Mud flows, landslides and avalanches inflict a lot of damage in the mountains of Kazakhstan.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: The NEAP/SD Centres collect information in order to develop measures and to coordinate activities directed toward the prediction of mud flows, landslides and avalanches. The NEAP/SD Centre is also going to study glaciers and their influence on climate change.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: The agricultural policy is in place along with the agricultural development programme for 2000-2002 approved by the Government in 1999. The legislation of Kazakhstan provides the simplified tax procedure for the agricultural producers who use land as a main asset or who use land to produce the agricultural products and also to process their own products (the united land tax for the farmers, and basing on the Patent for the juridical persons). Apart from the activities planned for 2000-2002 in the support of the rice production, production growth of sunflowers, cotton development were approved by the governmental statement in 2000.

Programmes and Projects: The Action Plan on the implementation of the Governmental Action Programme for 2000-2002 was approved by the governmental decree in 2000. The Programme should ensure the economic increase in the competitive branches of agricultural production, a stable production of the main products by the use of effective general governmental support and other actions. In order to reach the objective, the growth points have been identified, i.e. the agricultural products competitive on its price and quality that have their potentially widening markets and sufficient shipment.

Currently the foreign loans are being made available to different programmes and projects aimed at *inter alia,* improving irrigation and drainage systems for sustainable production of irrigated lands, improving water management, improving legislative and institutional infrastructure and establishing information and extension services in the agricultural sector. These include: the Programme on Irrigation and Drain Systems Improvement ($80 millions, with co-financing of $20 millions from 1996 to 2003), the Programme on Water Resources Management and Land Recovery. ($40 million with co-financing of $15,12 million from 1998 to 2003), Project on After Privatisation support to the agriculture. ($15 millions, first stage to be finished in 2002. In order to strengthen the opportunities of creation of the production systems on the city areas, the Diary Branch Development Programme for suburb areas of big cities was approved by the governmental for 2000-2002.

The Combat on Poverty and Unemployment Programme for 2000-2002 was approved by the governmental in 2000 and its action plan was worked out and approved by the governmental later in the same year. The programme is intended to raise the employment level of the population. The Republic's Special Programme on "Conservation, Development and Consumption of the Agricultural Plants, Animals and Microorganisms Genofund for 2001-2005" was approved by the governmental in 2000 for the purpose of providing safety, development and effective use of the genofund in selection process, seed-growing, livestock breeding, biomedicine production.

Status: The agricultural sector is one of the most important branches of Kazakhstan's economy. The agricultural complex faced the problem of step-by-step transfer to the market economy afterwards the fall of the centralized planned economy. Complex activities have been undertaken in order to reform the branch, liberalize prices, privatize state and collective property, create conditions for forming and consolidation of the objects of market and market relations development in the villages. As a result, the country's economy became multi-structural, form of property has changed, and at the beginning of 1999, 99% of the farming objects have been based on the private property. However, the undertaken reforms did not produce quick positive results. The economic situation in the agricultural sector was deteriorating, the investments almost stopped, the production volumes reduced, the sown areas have been reduced, the life level of country people got down suddenly. Taking into account the current situation, the government some support that allowed to stable the situation since 1999 and to increase the production volumes of the agricultural sector. In 1999 the real growth of GDP was 1.7% due to the considerable increase of the gross agricultural production (by 28,9%), the gross wheat crop is 14,3 million tones, raw cotton 249,4 million tones, white beet 293,9 million tones, oil-yielding crops 159,3 million tones, potato 1694,7 million tones, vegetables 1287 million tones, 3957,9 thousands heads of cattle.

Currently, conservation and reclamation of the land resources are being carried out within the project framework of the "Review of the **a**gricultural policy, planning and comprehensive programmes as multifunctional aspects of the agricultural sector".

The Ministry of Health, the Ministry of Ecology and Bioresources, and the Ministry of Agriculture have approved in 1996, "the instructions on disposal and destruction of the prohibited and overdue pesticides and their packaging". All issues on safety usage of the pesticides and prevention of the environmental and agricultural pollution as well as negative impact on human's an animals' health are partly regulated In Kazakhstan by the Law on "Environmental Protection" and on "Sanitary-Epidemiological Status of Population", and by other legislative acts issued in agreement with them. The "Sanitary rules on storage, transportation and usage of the chemical pesticides", list of prohibited chemicals, list of restricted usage chemicals were developed and approved by the Main state sanitary doctor of Kazakhstan. The "Rules on Registration Experiences, State Registration and Re-registration of the Pesticides approved to use in Kazakhstan" have been adopted by the Decree of the Minister of Agriculture in 1999. According to the plan of the legislative works of the Kazakhstan Government for 2001, the Ministry of Agriculture is working out a draft of the Republic Law on "Plants' Protection" that will include the regulation and control on pesticides.

The present structure of the sowing in southern regions of Kazakhstan is sufficient. In 2000 the sowing area of the irrigated lands was 1030,9 thousands hectares or 6,4% of the total sowing area in the Republic. A big part of beans increases the land fertility, keeps its structure, improves its reclamation characteristics. Cultivated crops locate on the area big enough to destroy the weeds. These features are valuable when the usage of the chemicals is not accepted due to the environmental and economic aspects. The salt content plays a significant role in the productivity level of the irrigated lands. An experience done in 1993 showed that in Kazakhstan only 28.7% of the irrigated lands are not salted, about a half of areas has low salt level, other - medium and high level of salt. There are oblasts where almost all land is salted (Kzylordinskaya).

Capacity-Building, Education, Training and Awareness-Raising: The Ministry of Agriculture runs the planned popularization of the main clauses of the Kazakhstan development strategy 2030 that concern the agricultural production development. The mass media in all oblasts inform about the main directions in the reforming for the better economic and social aspects of this branch and growth of people's welfare. Starting from August of this year the informational-analytical bulletin "Agroinform" will be published to inform the farmers and others within the market conditions and provide an effective governmental regulation of the agricultural branch.

Information: The Ministry of Agriculture developed a framework for developing a Information-Marketing System (IMS), approved by the governmental in 2000 "about issues of formation of the information-marketing system of the Ministry of Agriculture". The main purpose of establishment of the IMS is to join state and private bodies working in agricultural sector in one information net and create a flexible data base that could show the real picture of the agricultural branch, it's dynamics and trends, to provide an information to the agricultural producers that would help in finding the profitable market schemes and cheap working materials. According to the framework of IMS, the final product of IMS is to be an html-page in the Internet and published issue of "Agroinform".

Research and Technologies: In order to renew and improve old machines and tractors, the CJSC "KazAgroFinance" was established to provide the long-term leasing of the techniques. According to the scientific research that was approved by practice, it is possible to regulate the salt ratio by draining, backwashing, backflush irrigation, and other agrotechnical activities. However, in Kazakhstan an area of drained lands is small. At present three state reclamation dispatch offices observe the reclamation status of lands, they apply preventive measures to avoid salted areas appearance and land swamping. It is planned to organize a network of selective genetic centres, central and regional genofund storages. The amount of 1484 millions tenge is provided for the tribal animals growing in the selection-genetic centers. Jointly with the National Center of Agricultural Research of the Ministry of Education and Science of Kazakhstan the plan of usage of the plant animal genofunds that includes a list of mostly important cattle species and their natural habitat zones in Kazakhstan was approved by the Ministry of Agriculture taking into account their production rate and use expediency.

Financing: The Ministry has developed a creed scheme for the agricultural sector based on the formation of network of the creed associations that include the consolidated funds of the producers and the governmental

financial resources in order to solve a question of an access of the agricultural producers to the financial resources. To realize this scheme the government has established the CJSC "Agricultural credit corporation" in 2001, having 100% of governmental share holding. This organization has a license to hold loan business and credit the agricultural communities only; also the pilot project was approved for crediting of the agricultural production. The budget programme for the "conservation and development of the elite seed-growing and livestock breeding" was worked out and 3,7 billions tenge was included as a subsidy for the livestock breeding communities that produce the pedigree cattle, for the establishment of special center and decreasing a price on embryos for the agricultural producers, for restoration of the state organization that produces poultry and decreasing price of the sold eggs. The Programme on Conservation, Development and Usage of the Plant, Animal and Micro-organisms Genofund for 2001-2005 includes the creation of an effective system of promotion of the valuable genofund from science to the agricultural producers. Also it includes the funds in amount of 228 millions tenge from the republic budget for an acquisition of the animals and making the collection herds. In 2000, the government granted 200 millions tenge to the agriculture for the particular recovery of the expenses on the elite seeds and livestock breeding production and 2218 millions tenge on plant protection, 459 millions tenge on health control of animals. In 2001 the republic budget granted 800 millions tenge for the elite seeds and livestock breeding production, 3050 millions tenge on plant protection, 1345 millions tenge on health control of animals.

Cooperation: No information available.

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: The key executing agency of Republic of Kazakhstan in the field of environmental protection is the Ministry of Natural Resources and Environmental Protection and its subsidiaries. The Parliament of the Republic develops legal instruments for the preservation and balanced usage of biological diversity. Other ministries and departments are involved in the process of preservation and rational usage of biological diversity. The Government and the local government bodies, according to the competence, set the order of the protection and usage of bio-resources, approve the rates of payments for their use, regulate activity of the nature users pursuant to the environment legislation, receive proposals for the creation of Specially Protected Natural Territories.

In the Republic the legal frameworks that address environmental protection and rational usage of biological diversity include: the Wood Code of the Republic of Kazakhstan, 1993; the Water Code of the Republic of Kazakhstan, 1993; the Law on "Protection, Reproduction and Usage of the Animal World", 1993; the Decree of the President of the Republic of Kazakhstan valid of the Law on "Oil", 1995; the Decree of the President on the Law on "Land", 2001; the Decree of the President of the Republic of Kazakhstan valid of the Law on "Entrails and Entrail Usage", 1996; the Law on "Ecological Expertise", 1997; the Law on "Environmental Protection", 1997; the Law on " Specially Protected Natural Territories", 1997.

According to the Law on “Specially Protected Natural Territories" of 1997, 13 types of such territories have been selected for having the special state value or the special scientific value, wetlands, having international value, sites of entrails presenting special ecological, scientific, cultural and diverse value. The development of the National Strategy on Preservation of Biodiversity for the implementation for the purposes of the Convention is formulated in the Development Strategy of the Republic of Kazakhstan 2030. Its section entitled "Environment and Natural Resources" addresses the preservation of diversity of the animal and vegetative world (monitoring, rational usage, reproduction and protection) over a long-term period, development of a network of specially protected natural territories on the basis of ecological zoning, which is supposed to be implemented before 2010. The main purposes of the National Strategy on Preservation of Biodiversity of forest ecosystems and access to a genetic resources are: the preservation of biological diversity in a natural condition (in-situ); the registration and social and economic estimation of a bio-resource potential of country and its balanced usage on the normative and legal basis; the extension of a genetic pool; maintenance of genetic independence and biological safety of country; conditioning for preservation of a gene pool of sorts of agricultural plants, number of agricultural animals and optimisation of the areas of agriculture.

The National Strategy calls for, *inter alia:* state estimation of biological diversity; detection and liquidation of threat to existence of kinds and ecosystems at anthropogenic effect; usage of the sovereign rights of the state on the resources; installation of conventional relation of local population from preservation and rational usage of biological diversity; detection of optimum conditions of environmental sanitation of environment and decrease of hotbed effects as a result of increase CO2 (carbon emission); development of the legal bases of exception and guards of bio-resources, definition of balance of economic and social ecological profits at sustainable usage of biological resources at regional, national and local levels; reduction of threats and maintenance of preservation of biological diversity; perfecting of a system of coordination of activity on problems of biological diversity; ecological renovation and recovery of the infringed ecosystems; maintenance of knowledge and broad enlightenment of local population, public non-governmental organizations on problems of preservation and balanced usage of biological diversity.
The economic aspects of the management of nature are composed of the following: the registration and social and economic estimation of biological diversity and resource potential in the form of cadastres including key components: state registration of nature users; the quantitative registration of biological resources; volumes of a home consumption and export potential; appraisal of biological resources. The cadastres should have territorial – address parameters. The existing system of branch resource cadastres does not provide efficient control over the management of nature. It is necessary to perfect licensing and limitation of nature use that are major ways of the control and prevention of threat to biological diversity. The necessity of the introduction of ecological insurance

for the Republic of Kazakhstan is stipulated by article 32 of the Law "on environmental protection", in which one is set that it can implement in the forms of mandatory and voluntary insurance.

A number of NGOs participated in the preparation and development of the draft Central Asian Transboundary Project on preservation of Western Tyan-Shan biological diversity. The representatives of ecological organizations working in the field of the legislation, such, as "LEEP", "Green saving" are engaged in the analysis and dissemination of the RK environmental laws and international conventions in the field of environmental protection in mass media. Since 1997 support has been given to priority activities of environmental NGOs, under the Gaff's small grants, which are directed to the preservation of the biological diversity. Main principles of this programme are to train the local population in activities related to the preservation of biological diversity, strengthening of partner relations between the local authorities and public organizations.

Programmes and Projects: The Ministry of Natural Resources and Environmental Protection, the Ministry of agriculture, and the Ministry of Education and Sciences have developed techniques of calculating the standards of exception of natural resources, including wood, plant-raw and fodder. The Ministry of Natural Resources and Environmental Protection undertakes a project to implement the Convention on Biological Diversity, with the grant from GEF and UNDP, aimed at an estimation of biological diversity, preparation of the National strategy and action plan on preservation and balanced usage of biological diversity, and creation of an intersectoral organ, preparation and distribution of the National report on state of biological diversity. The GEF-funded programme of small grants, in cooperation between the Ministry of Natural Resources and Environmental Protection, NEC/SD, NGO, is directed at capacity building of local communities in the solution of problems of preservation and balanced usage of biological diversity.

Status: The Specially Protected Natural Territories occupy about 2,3 % of the area of Kazakhstan. Now in Kazakhstan there are 9 reservations, 5 national parks, 60 reserves, 24 monuments of the nature of the Republican value, 3 zoological parks, 7 botanical gardens, a few deontological parks operating; 3 wetlands are recognized having international value according to a list of Ramsar Convention (1971) and 150 pools having state value are determined. The territory of Kazakhstan possesses 835 kinds of vertebrates. From 178 kinds of mammalian of Kazakhstan in 9 existing reserves is protecting 140 (78,6 %) species, among them 22 species in the Red Book of Kazakhstan (1991), or 61,1 % from a general list of mammals in this book. The wild species are insufficiently protected, as in all zones of deserts there is only one reserve, in its western part. There are no sufficiently protected birthplaces for these valuable hoofed animals. On reserved territories there are no 37 species (21,1 %) of mammals, including 12 species from the Red Book. From 489 kinds of birds meeting in different seasons of a year on territory of Kazakhstan, the greatest concern relates to the nesting kinds. Such in Kazakhstan 396 kinds (81 %) are included. In the Kazakhstan reserves 346 kinds of birds' nest, that makes 87,4 % from all nesting birds in Republic. Among them 39 kinds of infrequent and threatened disappearance, that makes 76,5% from all nesting birds in Kazakhstan. From total reptiles in reserves of Kazakhstan there are representatives of 31 species (63,2 % of herpetofauna of Kazakhstan). From 12 amphibians, living in Kazakhstan, on reserved territories meet 6. From 104 kinds of fishes in pools of the Kazakhstan reserves live only 23 (22,1 %).

125 kinds of vertebrate animals, 96 invertebrate and 287 maximum plants are brought into the Red book of Kazakhstan. As a whole, the present reserves do not preserve unique flora and fauna variety of Kazakhstan. The exhaustion of biodiversity of natural flora happens as at the expense of full disappearance of local populations of kinds, and at the expense of reduction of their area and number, reduction phito-cenosis activity and genesial ability. Owing to mass ploughed grounds, sharp reduction of the areas of natural vegetation, erosion of soils, man-caused and agricultural contamination fauna of land and soil insects, spiders, birds, mammalian and other groups of animals hardly has suffered. Approximately on 80 % the zonal steppe fauna in northern areas of Republic is deleted.
The large changes in fauna have taken place around large industrial cities, on the territory of military polygons and in regions of a development of mineral resources. On a condition of fauna render unfavorable effect of a form of activity of the persons directed on scrambling with desertification. So, the inroad of water by artesian wells changes general appearance of desert, there are numerous micro lakes about flowing wells, where animals collect for

watering that boosts poaching. Clout on fauna render the civil work connected to the gasket of roads, pipe lines, transmission lines, that creates conditions for infiltration into natural landscapes of alien units rendering unfavorable effect on aboriginal fauna. In connection with the limitation of a river drain the meadow vegetation everywhere degrades, and the meadows disappear, as the type of vegetation.

The Ministry of Natural Resources and Environmental Protection develops technique of calculating the standards of exception 67 kinds raw (basically medicinal) plants for natural-climatic sub-bands. The definition of the standards at a level of areas and regions is necessary. There is no republican normative document on the biological substantiation of allowed volumes of bar of different kinds of vegetative raw material. Lack of target monitoring and information base, has constrained the development of the standards.

There are a series of institutional problems including separate control functions by different bodies, lack of a standardized/coordinated system for ecological monitoring, absence of a centre of the analysis and data processing on conditions of bio-resources. Improvement of the control system for the protection, reproduction and usage of the vegetation and animal, and specially guarded natural territories, is also necessary. The role of the Ministry of Natural Resources and Environmental Protection in reinforcing the law on environmental protection, needs to be strengthened.
Annual budgetary funds available for environmental measures are reducing. In this regard, it is necessary to engage investors and international organizations, as well as develop special programmes at the state level. Licensing requirements and restriction on the use of natural resources are major means of the control and preventing of threat to biological diversity. Licenses are regulated according to separate means to manage nature, the special sanctions against the development of certain kinds of resources, emissions, and resets - both arrangement of contaminants and waste for the particular user. The limits determine maximum permissible sizes of management of nature.

Capacity-Building, Education, Training and Awareness-Raising: The Ministry of Education and Sciences operates scientific divisions in the form of: common environmental (biosphere) profile, biological direction; nature of agriculture and related ecologies. There is a network of institutes of applied character: forestry and agro irrigation; plant protection; feed-preparing and pasture facilities. All these establishments, and also higher educational institutions are well staffed with scientific personnel and provide research on problems of biological, agronomical variety.

The personnel problem is rather acute. A low level of wages, the hard life conditions, isolation from scientific and cultural centres do not stimulate the qualified professionals to residing and engaging in jobs to protect Kazakhstan reserves and national parks. In the Republic there is no school to prepare experts on reserves. While some training in this area started in high schools and technical schools of Kazakhstan only since 1984, there are a number of difficulties, including financial. For increase of a level of operation natural reservations, it is necessary to develop a system of international network of the experts, participation by the personnel of protected natural territories of Kazakhstan in international environmental forums, for learning and exchange of experiences.

The preschool programme integrates education about nature and the environment. The initial environmental orientation is given at grammar schools, Lyceums, and college. The higher educational institutions of the Republic train national experts who are capable of conducting technological and education programmes on environmental issues. At the Kazakh State National University, for example, its bachelors' and masters' courses specialize in the field of a bio-ecology, chemical ecology, natural conservation, engineering environmental protection and monitoring. The Institute of Improving Professional Skills of the teachers of the Ministry of Education and Science, state high schools, and also public universities and academic establishments, are engaged in retraining and enhancing professional skills of the experts in the field of an environmental protection.
A draft programme TASIC was launched in 1997 in Kazakhstan for increasing public awareness about the state of the environment. In mass media -the ecological problems are widely illustrated in local newspapers. The major regional events are mirrored in ecological headings of the regional and region newspapers. The basic researches of the scientists are published in the scientific editions of Ministry of education, Academy of science, KazSNU etc. Wireless and television are attracted.

Information: The Internet information in Kazakhstan concerning preservation and rational usage of bio-resources is provided at: www.neapsd.kz. There is no programme for monitoring biological diversity in Kazakhstan, although inventory of plants and animals species by location and their quantity have been recorded for more than 40 years. A series of the registrations of a number of kinds of infrequent and vanishing animals brought in the Red Book of Kazakhstan is conducted. The inventory of forest ecosystems is conducted every ten years, state inventory of wood fund every five years and monitoring of the current condition of forests on an annual basis. Regular inventory requires large costs, largely for travel required to conduct such inventories.

Research and Technologies: Critical requirements for scientific research on the system of protected natural territories and for monitoring, analytical character, require modern equipments, including computers, sufficient optical and measuring instruments, field equipment, means of transport. Many of these essential equipments are still not available in the country. Within the framework of joint researches on global animal industries, the Republic of Kazakhstan together, with other states of Central Asia, participates in development of the project directly connected to preservation of biodiversity of pastures - "Integrated methods for development of animal industries and conservation of pastures in Central Asia" since 1997. In the Republic the science foundations are created, and their regular conferences serve as good means to inform the scientific community about environmental problems in a timely manner.

Financing: The financing in this area comes from the following sources: the national and local budgets; means of funds available for environmental protection; private means of the nature users; the voluntary instalments and donations of legal and natural persons; diverse sources of finance, which have been not prohibited by the legislation of the Republic; compensatory payments (fines, damage) for unauthorized and non-rational usage, damage and destruction of biological resources, contamination of environment entailed aggravation of their condition or loss.
The large contribution to the preservations of biological diversity was made through the public initiatives in the field of an environmental protection and foreign funds (Soros-Kazakhstan, HIVOS and F. Ebert Fund), as well as by a number of non-governmental organizations.

Cooperation: The Convention on Biological Biodiversity was ratified in 1994. The Republic of Kazakhstan also fulfil commitments under the following international agreements, including: the Convention on Biological Diversity, the Convention on Protection of Cultural and Natural Heritage, the Agreement on Protection and Usage of Migrating Species of Birds, the Framework Convention on Climate Change, the Convention on Combating Desertification, the Vienna Convention on Ozone Layer Protection, the Montreal Protocol

The agreement was reached in 1993 on the establishment in Kazakhstan of four biosphere reservations (in Western Tyan-Shan, on boundary of steppe and half-wilderness zones, in a southeast of Almaty area, and on Altai) within the framework of formal / informal cooperation between the Ministry of Natural Resources and Environmental Protection of the Republic of Kazakhstan and the Environment Protection Union Germany (NABU). Since August, 1996 the activities are conducted towards the establishment of the first biosphere reserve in Kazakhstan. Within the framework of the regional agreement between Russia, Mongolia and Kazakhstan the establishment of a transboundary biosphere territory on Altai is planned.

The Central - Asian Transboundary Project on preservation of biological diversity of the Western Tyan-Shan, between the Governments of the Republic of Kazakhstan, Kyrgyzstan and Uzbekistan was funded by GEF and the U.K.Government. The purpose of the project was to strengthen capabilities of the three countries in the preservation of biological diversity of locale within the limits of existing and planned protected territories involving local population. The project envisions the development of a Regional Programme of the small grants for support of the initiatives of non-governmental organizations and local communities in the field of preservation of biological diversity.

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CHAPTER 16 AND 34: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY AND TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AMD CAPACITY-BUILDING

Decision-Making:
Technologies : The Ministry of Ecology and the Centre of National Environmental Activity Plan for Sustainable Development (NEAP/SD) are responsible for technology issues.
Biotechnologies: The Ministry of Ecology and the NEAP/SD Centre are responsible for biotechnology issues.

Programmes and Projects:
Technologies: No information available.
Biotechnologies: No information available.

Status:
Technologies: No information available.
Biotechnologies: No information available.

Capacity-Building, Education, Training and Awareness-Raising:
Technologies: No information available.
Biotechnologies: No information available.

Information:
Technologies: No information available.
Biotechnologies: No information available.

Research and Technologies:
Technologies : Kazakhstan is ready to establish a national Cleaner Production Centre (NCPC) within the framework of the NEAP/SD Prject approved by the Kazakhistan Governmnet. The NEAP/SD Centre is capable of serving as the nexus for research and dissemination fo cleaner production processes for major industrial sectors. The NCPC will have a co-ordinating and catalyic role in the regard to cleaner production. Their activities cover four areas : in-plant demonstration, training, infomration dissemination, and policy assessment.
Biotechnologies: The NEAP/SD Centre studies international experiences and develops technologies of animals, plants and resources protection.

Financing:
Technologies: No information available.
Biotechnologies: No information available.

Cooperation:
Technologies: No information available.
Biotechnologies: No information available.

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CHAPTER 17: PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

Decision-Making: No information available.

Programmes and Projects: The project on "Regulation of the Syrdarya river and Northern Aral sea" was approved by the World Bank for a pre-loan advance payment at a rate of 1,8 millions US dollars. The large-scale regional GEF project "Water resources and environment of Aral sea basin management" aimed at the removal of native born reasons of excessive usage of waters of basin proceeds, was implemented. For Aral and Kazalinsk regions of Kyzylordinskaya oblast the draft project "Water-supply, sanitation and public health services of settlements in Priaralye" is developed.

Status: There are two seas on territory of the Republic of Kazakhstan - Caspian and Aral. The main problem of the Aral Sea for 30 years has been the centre of attention of those concerned. Now it has dimmed in the background of information boom around Caspian Sea, but the centre of social and ecological strength in this region is kept. In Priaralye as a result of non-rational economic activities around the basin of the Aral Sea, all major inter-related national environmental problems have arisen, including: lack of a water resources; contamination (salinization) of water by drain and sewage waters; unsatisfactory supply of the population by a qualitative drink water; degradation of pastures and arable lands (salinization of irrigated grounds); oOil contaminations; loss of tugai and saxaul forests; and reduction of biodiversity.

The extreme urgency of the problem of supply of the qualitative drink water to the population living in lowers of Syrdarya, is stemmed from the construction of a complex of station of bioclearing and storage of sewage waters of regional centre Kyzylorda. Until 1990 about 10 km.^{3} of highly mineralized, contaminated drain waters were dumped in the river annually. About 60 % of agricultural and half of municipal water pipes are in bad condition that results in contamination of surface waters by petroleum, organic and nitrogen-contained matters and heavy metals. As a result of these reasons quality of surface waters, including Aral Sea has worsened considerably. As the corollary, many water and land ecosystems have been damaged.

The Caspian Sea is the large supplier of oil, gas and seafood. All these goods are strategic and in the international market are of a great demand. Also the Caspian Sea is the main supplier of energy and freshwater in the Western Kazakhstan by means of a nuclear power station and distiller. The increase of the level of the Caspian Sea proceeding during 18 years was slowed in 1995. In 1996 the main downturn of a sea level has taken place basically due to the low level of basin of the Volga River. Calculation of the level of the Caspian Sea regarding possible anthropogenic changes of a climate and units of a water balance that the sea displays cannot be concluded before 2005; up to 2020 of sea level fluctuation will lay within the limits of its natural climatic changes with allowance due to the irrevocable water use. The high levels of the sea of infrequent recurrence can reach maximum marks observed in conditions of a modern climate by 2050 in the absence of water use (minus 23 m - minus 22 m). Owing to the increase of the sea area as contrasted to its value in the beginning of increase of the level (1978) costs of evaporation (minus precipitations) were increased last years at 27 cubic km. (1995) -45 cubic km. The increase accounts for the component of a water balance of the sea on the indicated value considerably has reduced a capability of further increase of its level. The equilibrium level (mean long-term sea level) of the sea with modern water use (40-45 cubic km. annually) has resulted in almost 2 m lower than the marks of the surface of the sea observed in the last few years. It indicates that after the completion of current rise it will be stabilized in the subsequent downturn.

The contamination of the territory by oil is not only priority national environmental issue of Kazakhstan, but also the largest issue of the Caspian region. The thin oil film covering water, does not let sunrays and air to reach water, and it drastically for marine animals, birds perish. All of these result in enormous economic and environmental losses.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technology: No information available.

Financing: No information available.

Cooperation: Within the framework of the implementation of the Caspian Environmental Programme in Kazakhstan, the International Caspian Regional Centres are established to monitor the sea level fluctuations and preservation of biodiversity; activities are carried out by these centres under 10 theme.

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CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

Decision-Making: No information available.

Programmes and Projects: The development of the programmes of water supply for oblasts is started. One of them, for the North-Kazakhstan oblast is already finished. The compilation of a cadastre of a water resources is completed. The State Programme for "Drinking Water" is developed.

Status: In Kazakhstan there are 7 thousand rivers with the length more than 10 km., 155 rivers - more than 100 km. and 7 rivers - more than 1000 km. The longest is Irtysh river (1700 km. on territory of Kazakhstan). There are 48262 lakes with the total area 45 thousand km. (without Caspian and Aral), among them 3014 lakes of an area more than 1 km. (40,8 thousand km^2.). The largest lake is Balkhash (area 106-112 $km.^2$, depth 5-6 m). The Republic of Kazakhstan is rather poor by water resources as contrasted to by republics of European and Siberian parts of CIS, but richer than the Central Asian countries.

The lack of freshwater is the most acute environmental issue hindering sustainable development of Kazakhstan. The general water resources of the rivers amounts n average to 100,5 $km.^3$, usable - 46 $km.^3$. The remaining water volume is expended on environment, fishery, sanitation (29 $km.^3$), transport and power (9,0 $km.^3$) need, on filtration and other kinds of losses (12 %). Specific water supply is 37 thousand m^3 per 1 $km.^2$ and 6,0 thousand m^3 per capita annually. Kazakhstan as a whole displays an acute deficit of water, and also for separate locations. Lack of water resources is demonstrated by the average long-term water content reaching 6,6 km.3 and is felt in all basins. During arid years the level of water supply is 60 %, and on separate locations (Central Kazakhstan) only 5-10 %, thus the deficit basically occurs on irrigated agriculture. Emergency situation has developed in basins of the transboundary rivers. The most supplied locations in 1999 were southern areas: Almatinskaya, Zhambylskaya, Kzylordinskaya, Taldykorganskaya and Pavlodar oblast in Northern Kazakhstan. Territories of Aktyubinsk, Zhezkazganskaya, Kokshetauskaya, Semipalatinsk oblasts are also referred to as low supplied areas.

The deficit of water resources in low lands of Syrdarya reaches 1,2-3,5 cubic km. annually. The morpho-dynamic changes of river processes have resulted in silage of channels and channel of the river, and as a corollary, to a degradation of ecosystems of ancient and modern deltas Syrdarya. Attempt to transport large water volumes to the Aral Sea have resulted, especially in wintertime, in flooding large territories. The lake Balkhash is the third largest internal-drainage lake in Kazakhstan after the Caspian and Aral Seas.

The overall length of the lake from the southwest end up to the eastern coast amounts to 600 km., maximum width western stretch is about 70 km., eastern - 45 km. At a mark of lake in 2000 - 341,41 m, the area of water mirror amounts to 17,2 thousand km.2, volume 94,7 km.3, area of columbine is more than 500 thousand km.2. Anthropogenic effect connected to the heavy use of water, land and other natural resources in basin, and also the increasing contamination of the lake and rivers of basin by industrial, agricultural and municipal drains have resulted in essential aggravation of environmental conditions in the region. At the expense of sharp decreasing of a level of lake almost on 2,3 m its shores have dried, on the significant area of the drained bottom of lake the centers of an offset of salts, sand and dust in ambient space have appeared.

The numerous lakes and bays have dried up, almost on 2/3 the area of wetlands in a delta of Ili was reduced and many jellied flood-lands have dried. The greatest changes have taken place in undercurrent of Ili. After construction of Kapshagay hydroelectric station annual floods were stopped, the maximum freshet consumptions were substituted considerably by smaller consumptions. The numerous passages and escaping of delta in lake through reed were over, as well as reeds, have dried up. To the end of 1986 among numerous passages of delta operate only four: Shumarkulan, Iyr, Bazarbai and ostium Kalgan - Ili. From 15 lake systems of delta essentially remained only 4-5. In the stayed lakes the salinity of water has increased, and sharply contents of pesticides and heavy metals in

water, bottom sediments, phito and zooplankton, in tissues of fishes was increased. It was almost completely stopped musquash trade per former years 30 % from all union. Loss of the spawning places and contamination of waters of delta and Balkhash have plotted a large loss to fishery.

The problem of preservation of a unique ecosystem is in connection with continued contamination of the lake by pesticides with spraying and heavy metals, phenols and petroleum from metallurgical works. Owing to contamination by agricultural chemicals. Fish loss in rivers is also watched. According to the observational data the receipt of contaminants from Chinese territory of the Republic of China on Ili River has increased over the years.

The river Ili makes 80% of a drain of Balkhash. Waters of Ili basically are shaped on territory of the Republic of China. Under the available information in the Republic of China for the last years there is heavy use of waters of the river on industry development, power engineering and agriculture. In low water years the residual consumptions not superior 750-800 cub. m/sec only reach the territory of Kazakhstan. During such years the water volume charged while the multiwater years, in Kapchagai water storage basin will be used.

The boron, barium, brass, zinc, titanium, manganese, vanadium, cobalt, niobium, nickel in lake water exceed PDC from units up to hundreds time. In the Ili ostium and bay Bertys the arsenic up to 1.5 PDC is contained. The increase of quantity of a cadmium is marked. The accumulation of trace substances happens in bottom sediments, fodder organisms, muscle tissue and bodies of fishes. Activity of the jumbo non-ferrous metallurgy, regulation of the rivers, feeding lake, irrevocable scooping of water on industrial and agricultural needs and, as a corollary, falling of a level and increase of salinity of Balkhash water have resulted in significant changes in fodder organisms and fishes.

Research and Technologies: The water use economy and rational usage of water resources, which reflect the condition of internal water systems of the state, are some of the main problems for the Republic of Kazakhstan. The condition of the Aral Sea is also a problem, as the capability of overcoming of environmental catastrophe of the Aral depends on it. Different methods and ways are applied for this purpose, including: development of legal base of rational water usage; conclusion of bilateral and multilateral treaties and agreements on the rational water usage of transboundary water resources; development and application of water-save technologies and modern methods of spraying and transportation of water; making of coast-protecting activities and activities on liquidation of consequences of flooding, mud flows and degradation of shores of the rivers; control-inspection works on the detection of the infringes of water usage; application of the appropriate fines; and usage of a compulsory procedure of EIA for the new and upgraded firms.

Construction of Kapchagai hydroelectric station with water storage basin of long-term regulation has rendered rather large load on an ecosystem of Balkhash and delta of Ili River. Kapchagai water storage basin on the one hand has created favorable conditions for most rational usage of water resources, on the other hand has stipulated origin of a number of negative consequences in lowers of Eli river and in its delta. It is necessary to mark, that an error is not a fact of construction of water storage basin, but waiving of construction in tail water a control hydroelectric station unit. The construction of a control hydro unit in undercurrent of the river could prevent effect made in the power purposes, winter diurnal high waters, which will derivate bottle-necks, numerous floods and losses of water, connected to them.

Financing: Financing for rational water usage and water resources protections has been provided. In 1997 6,7 billions tenge was spent for this purpose.

Cooperation: At present legal relationships between Kazakhstan and the Republic of China are not established nor is there any agreement on shared use and protection of Ili waters within given international rules. The Republic of China has not joined the International Convention on Transboundary Waters. It negatively influences on the quantity of going water from the Republic of China and on its quality.

The activities on intergovernmental cooperation, engaging in the investments in a water management are carried out. Agreement signed between Kazakhstan and Kyrgyzstan on usage of hydro-economic facilities on the rivers Shu and Talas. On meetings of the Intergovernmental coordination hydro-economic commission the ways of operations of cascades of water storage basins and limits of water intakes in basins of the rivers Amu Darya and Syrdarya have been approved.

The intergovernmental agreement between Kazakhstan, Kyrgyzstan and Uzbekistan on usage of hydro-power resources of the Natyn-Syr-Darya cascade of water storage basins in 2000 has been signed. On basin of Ural river the schedule on distribution of a freshet drain of the rivers Large and Small Uzen on 2000 is approved by the Russian-Kazakhstan workgroup. The agreement on water delivery from the Saratov channel and Palass irrigation system is concluded and the problems on engaging additional water volumes for supply of Astana are studied. The activity on completion of construction Kokshetau industrial water pipe and survey of financial assets indispensable for it are conducted.

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CHAPTER 19: ENVIROMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS

Decision-Making: The Ministry of Ecology and the Centre of National Environmental Activity Plan for Sustainable Development (NEAP/SD) are responsible for the management of toxic chemicals. The NEAP/SD Centre co-ordinates activities of ministries and departments, local agencies, public organizations and business structures to implement work for control and management of toxic chemicals and dangerous products. Ecological problems, projects and activities will be discussed and priorities will be identified at the Republic Seminar.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: The NEAP/SD Centre also collects information on substances distribution and analyses their impact on health risk.

Financing: No information available.

Cooperation: No information available.

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CHAPTERS 20 TO 22: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS, SOLID AND RADIOACTIVE WASTES, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC

Decision-Making:
Hazardous wastes: The Ministry of Ecology and the Centre of National Environmental Activity Plan for Sustainable Development (NEAP/SD) are responsible for the management of hazardous waste. The NEAP/SD Centre coordinates activities of ministries and departments, local agencies, public organizations and business structures to implement work for control and management of hazardous wastes.
Solid wastes: The Ministry of Ecology and the NEAP/SD Centre are responsible for waste management. The NEAP/SD Centre coordinates activities of ministries and departments, local agencies, public organizations and business structures to implement control and management of solid waste dumping and directs activity towards waste recycling.
Radioactive wastes: The Ministry of Ecology and the NEAP/SD Centre are responsible for the management of radioactive waste. The NEAP/SD Centre co-ordinates activities of ministries and departments, local agencies, public organizations and business structures to implement work for control and management of radioactive waste. It collects information on monitoring of radioactive waste and analyses resulting health risks. Ecological problems, projects and activities are discussed and priorities identified at the Republic Seminar.

Programmes and Projects:
Hazardous wastes: No information available.
Solid wastes: No information available.
Radioactive wastes: No information available.

Status:
Hazardous wastes: It has been estimated that 800 million tons of hazardous wastes are generated in Kazakhstan every year, and nearly 17 billion tons of these waste are presently being held in landfills in the country. While there is no comprehensive inventory of ranking as to what risk they pose to human health, hazardous waste is disposed primarily in unlined landfills that are not well-managed. Moreover, there is little systematic waste recycling by the industry. The presence of such metals as gold, platinum, vanadium and copper in some of this waste indicates the need for cleaning up the landfill sites and for the introduction of resource recovery.
Solid wastes: Pollution problems are particularly severe in the vicinity of urban and industrial centres where adequate and fully operational wastewater treatment facilities do not exist either for municipal or industrial effluents. Of the nearly 1,200 major industrial enterprises in the country, fewer than half have functioning pre-treatment facilities. Municipal wastewater is commonly treated in unlined lagoons, which receive untreated or poorly treated industrial effluents as well. Approximately 8 billion cubic metres of wastewater are presently being held in lagoons in 8 major cities, causing contamination of surrounding soil as well as surface and groundwater resources through overflow and seepage.
Radioactive wastes: The problem of radioactive waste is very serious in Kazakhstan as there are a lot of uranium mines in the country. Between 1949 and 1989, 470 nuclear devices were detonated in the Semipalatensk range that occupies an area of some 1.8 million hectares in the oblasts of Semipolatensk, Pavlodar, Karaganda, East Kazakhstan. Archival materials now indicate that there were exposure levels one hundred times above permissible levels. The epidemiological studies indicate high levels of cancer and mental illness among the people in the region.

Capacity-Building, Education, Training and Awareness-Raising:
Hazardous wastes: No information available.
Solid wastes: No information available.
Radioactive wastes: No information available.

Information:

Hazardous wastes: No information available.
Solid wastes: No information available.
Radioactive wastes: No information available.

Research and Technologies:
Hazardous wastes: No information available.
Solid wastes: The NEAP/SD Centre coordinates activities directed towards waste water management and supplying the population with sewerage. It collects information on monitoring of water pollution, and analyses health risks. Ecological problems, projects and activities will be discussed and priorities will be identified at the Republic Seminar.
Radioactive wastes: No information available.

Financing:
Hazardous wastes: No information available.
Solid wastes: No information available.
Radioactive wastes: No information available.

Cooperation:
Hazardous wastes: The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal has not been signed.
Solid wastes: No information available.
Radioactive wastes: No information available.

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CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: No information available.

Children and youth: No information available.

Indigenous people: No information available.

Non-governmental organizations: No information available.

Local authorities: No information available.

Workers and trade unions: No information available.

Business and industry: No information available.

Scientific and technological community: No information available.

Farmers: No information available.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: The Ministry of Finance is responsible for matters concerning financial resources in the Republic of Kazakhstan.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: **No information available.**

Information: According to the Constitutional norms of the Republic of Kazakhstan, the Ministry of Finance is going to issue Statistical Bulletin**,** which is intended for a wide range of readers and will contain information on state finance. Statistical Bulletin of the Ministry includes the data on financial operations of the Kazakhstan Government and of local implementing agencies, the data on government debt and government guaranteed debts, government stocks emitted by the Ministry, and data on privatization.

The Statistical Bulletin is presented to representatives of foreign organizations in Kazakhstan: International Monetary Fund (IMF); United Nations Development Program (UNDP); European Bank of Reconstruction & Development (EBR&D); Asian Bank of Development (ABD); Islam Bank of Development (IBD); US Agency on International Development (USAID); International Bank of Reconstruction and Development (IBRD).

At present the Ministry of Finance carries out the activity of establishing websites of the Ministry of Finance to make available information on state finance.

Research and Technologies: No information available.

Cooperation: No information available.

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CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES.

This issue has been covered either under Chapter 2 or under the heading **Cooperation** in the various chapters of this Profile.

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

This issue deals mainly with activities undertaken by the UN system.

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CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: Information, especially that on major group, for decision-making is not sufficient.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER: INDUSTRY

Decision-Making: Kazakhstan is ready to establish a National Cleaner Production Centre (NCPC) within the framework of the National Environmental Activity Plan for Sustainable Development (NEAP/SD) Project approved by the Kazakhstan Government. The NEAP/SD Centre is capable of serving as the nexus for research and dissemination of cleaner production processes for major industrial sectors. The NCPC will have a co-ordinating and catalytic role in regard to cleaner production. Their activities cover four areas: in-plant demonstration, training, information dissemination, and policy assessment.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER: SUSTAINABLE TOURISM

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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