Approved by the Resolution of the
Government of Republic of Kazakhstan
as of 24 January 2005 № 49

THE PROGRAM ON COMBATING DESERTIFICATION IN THE REPUBLIC OF KAZAKHSTAN 2005-2015

Astana, 2005

CONTENTS Page

1. EXECUTIVE SUMMARY

Title	The Program on Combating Desertification in the Republic of Kazakhstan for 2005-2015
Grounds for launching	Resolution of the Republic of Kazakhstan № 131 of 3 February 2004, “The Action Plan for 2004-2006 on implementation of the Concept of ecological security of the Republic of Kazakhstan for 2004-2015” (Paragraph 28).
Main designer	Ministry of Environmental Protection of the Republic of Kazakhstan
Goal	To combat and prevent desertification process on the territory of the Republic of Kazakhstan
Objectives	Phase I (2005-2007 years): Inventory and assessment of degraded lands; Informing and engaging all population groups in the process of decision making in the area of combating desertification; Development and implementation of the pilot projects on lands rehabilitation or prevention from their degradation; Phase II (2008-2010 years): Development and implementation of normative legal requirements and economical mechanisms of sustainable land management, which ensure reservation and rehabilitation of resource base; Ensuring consolidated implementation of international ecological conventions; Reducing the scale and preventing from further desertification and negative influence of droughts; Phase III (2011-2015 years): Integration of desertification combating measures into economic and social development of the country; Combating and preventing lands from desertification and maintain their enabling and sustainable condition.
Sources of financing	Total for 2005-2007 years - 3135,85 million tenge, including: 122,2 million tenge from the Republican budget: 2005 – 34,31 million tenge; 2006 – 40,73 million tenge; 2007 – 47,16 million tenge. 3013,65 million tenge of international grants: 2005 – 826,675 million tenge; 2006 – 1133,975 million tenge; 2007 – 1053 million tenge. The scope of financing from all sources will be determined while preparing the budget for the following year. The scope of financing for the following phases of the Program implementation will be determined while working out the activities plans for the appropriate phase.
Expected outputs	The first phase (2005-2007 years): Inventory and assessment of degraded lands; Informing and engaging all population groups in the process of decision making in the area of combating desertification; Design and implementation of the pilot projects on lands rehabilitation or prevention from their degradation; The second phase (2008-2010 years): Design and implementation of normative legal requirements and economical mechanisms of sustainable land management, which

	ensure reservation and rehabilitation of resource base; Ensuring consolidated implementation of international ecological conventions; Reducing the scale and preventing from further desertification and negative influence of droughts; The third phase (2011-2015 years): Integration of desertification combating measures into economic and social development of the country; Combating and preventing lands from desertification and maintain their enabling and sustainable condition.
Implementation period	2005-2015 Phase I – 2005-2007 Phase II – 2008-2010 Phase III– 2011-2015

2. INTRODUCTION

The Program on Combating Desertification in the Republic of Kazakhstan for 2005-2015 (hereinafter – the Program) is implemented within the framework of Kazakhstan's commitment to the UN Convention to Combat Desertification (UNCCD) and based on the commitment to fulfill the paragraph 28 of the Activities Plan for 2004-2006 on implementation of the Concept on ecological security of the Republic of Kazakhstan for 2004-2015, approved by the Resolution № 131 by the Government of the Republic of Kazakhstan as of February 2004.

Desertification is a major global ecological and social-economic problem. In XXI century, with growing population, intense management of fertile agricultural lands and an unexampled increase of man-caused pressure on environment, desertification might present the main threat to successful social-economic development.

Therefore United Nations Organization (hereinafter UNO) adopted and opened for signing the Convention to Combat Desertification in Paris (France) on June 17, 1994, which was ratified by the Law of the Republic of Kazakhstan "On ratification of the UN Convention to Combat Desertification" as of July 7, 1997.

For Kazakhstan, the main territory of which is located in the area of water deficiency, desertification problem is very serious. Presently, two third of the country's territory suffer from various extents of desertification.

The Program is the starting point in structuring the combat of desertification and termination of its consequences. It includes analysis of the causes and priority activities, which include a complex of immediate and preventive actions.

3. Analysis of the Current Status of the Problem

According to the definition of the UN Convention to Combat Desertification (hereinafter UNCCD), desertification is “degradation of lands in droughty, semiarid and dry sub-humid areas resulting from various factors, including climate change and man-caused factors”.

The causes for desertification in Kazakhstan are both natural and anthropogenic.

The main natural factor contributing to the desertification processes in Kazakhstan is the intra-continental location of the country, which determines the climate continentality and dryness, deficiency and distribution misbalance of water resources, leading to vast expansion of sands (up to 30 million hectares) and soil salinization (127 million hectares). Conditions conductive to land degradation processes are also created by the abnormalities of seasonal land formation particularities resulting from droughts. Another drought causing factor is a scarce vegetative cover and its growth dynamics. Such natural specifics of Kazakhstan cause poor environment resistance to the man-made influence (according to the available assessments, about 75 % of the territory is exposed to the increased risk of ecological destabilization).

Man-caused factors, leading to the occurrence and development of desertification processes in Kazakhstan are connected mainly to such types of economic activity as: pasturing; farming; mining; construction and exploiting industrial, military and civil units, irrigation and linear establishments. Desertification also results from illegal throwing, shrubbery and subshrub uprooting for cattle fodder and for fuel, fires in forests and steppes, chaotic recreation, dumps around settlements, pollution of soil and groundwater with toxic substances and transportation implications.

The main types of desertification in Kazakhstan, determined according to the criteria adopted by the UNCCD are: vegetation degradation; water and wind erosion; salinization and non-ulmification; chemical pollution of soil, subsoil and surface waters; man-caused interference with the hydrological and soil regimes.

Vegetation cover degradation is one of the most widespread and visually evident processes of desertification, found in forests, rangelands and hayfields degradation.

The registered percentage of forestlands in the Republic, including saxaul rangelands and shrubs bushes, make 4,6 %, while the actual percentage of forestlands, including only forests, make 2,3 %.

Reduction of forests and rangelands density, which decreased from 0,52 to 0,47, i. e. in 10 %, proves their degradation. Forestlands reduction and decrease of artificial foresting may lead to catastrophic deflation and degradation of rangelands at the predominant territories of drylands Kyzylkum, Moiynkum, Saryesik – Atyrau, and others.

Forests degradation is most evident in the forests of Rudny and South Altai, where during the last 40 years reproduction of coniferous forests fell in 7 %, fir forests -- in 13 %, apple trees area in Dzhungar and Alatau -- in 24%.

The forests greatly degrade in flood lands of dried rivers. An unwanted change of tree-kinds occurs due to the moisture deficiency in soil, resulting from regulated streaming in these forests. For example, in Chardarinsk region of South Kazakhstan oblast almost a third of turanga forests in flood lands of Syrdarya river gave place to the less valuable bushwoods of chingil.

Degradation of rangelands and hayfields. Massive ploughing up of virgin lands produced extremely negative and complex implications on drylands ecosystem of Kazakhstan.

Rangelands pressure placed on remaining virgin lands kept growing both due to the ploughing process, forced the cattle out to the unfertile rangelands, and due to the parallel livestock growth. Ploughing up of predominant part of fertile lands forced out and concentrated the livestock at a less fertile non-drained salinized territories, including salinized wetlands of riparian slides and hollows.

The rangelands adjacent to villages, cattle pens, milking machines and wells suffered the most severe degradation.

According to the data of the Agency on land management of the Republic of Kazakhstan as of November 1, 2004, 26,6 million hectares of rangelands suffered extreme degradation out of total 188,9 million hectares, which leads to severe desertification. Rangelands occupy 34,8 million hectares of the forests and drylands of the Republic, 5,6 million hectares out of 34,8 greatly degraded. The process of degradation tends to grow further.

Hayfields occupy 5,0 million hectares in Kazakhstan. Desertification leads to reduction of hayfields, dockage with toxic plants and bushes, partial or complete loss of both: the water regulating and resources supply role of the meadow vegetation.

Wind and water erosion. Desertification resulting from wind erosion of soil in Kazakhstan covered steppes, drylands, semi-drylands and deserts. The wind erosion deflates the soil fine surface layer and contributes to its desertification. The humus content and absorbency capacity of the plough-layer of deflated soil decreases, at the same time the content of carbonate grows, its agro-chemical and water-physical characteristics deteriorate.

Presently the harm caused to the arable lands by the deflation declined progressively to the reduction of the arable lands area. However, the arid zones of the Republic, especially the degraded rangelands, remain under the increased threat of wind erosion.

In the course of implementation of the program on expanding the irrigated lands, the irrigation greatly expanded to non-drained and salinized lands. The problem of ecology and water resources management in the regions covered by the large scale irrigation does not lie in a water deficit, but rather in extremely extravagant water consumption, which greatly exceeds net water flow in other countries with similar natural conditions. It is caused by the trivial technologies of water transportation, lack of economic stimulation and management practices.

Huge losses during filtration and extravagant irrigation practices resulted in a secondary salinization, water logging and water erosion, and wasted water discharges, which pollute rivers with fertilizers, pesticides and excessive mineralization. Violation of water balance and pollution of Amurdarya, Syrdarya and Ili rivers provoked catastrophic consequences. These consequences brought along a complex of ecological and economic problems in Aral and Balkhash areas.

One of the greatest tragedies of this century is an ecological crisis at Aral. Being located in the middle of the desert the sea used to create enabling climate and ecological conditions for the surrounding regions, regulate moisture at the vast territory adjacent to Aral and protect it the hot winds blowing from south deserts. The sea possessed high biological fertility, carried big fishery, hunting, transportation and recreational significance.

As a result of extensive water resources management of Amurdarya and Syrdarya rivers, mainly concentrating on irrigation, the sea transformed into two water reservoirs – Big Aral and Small Aral. Spring rivers' floods stopped, tugai and reed flora sharply decreased, numerous seaside lakes rich in flora and fauna dried out, sand deserts area expanded, climate dryness increased, air humidity fell in 10-18%, duration of frost-free period reduced to 30-35 days. Only in Syrdarya river basin 10-15% of irrigated lands fell out of agricultural circulation as a result of soil salinization and swamping. Rangelands fertility decreased in 2-3 folds and crops harvesting declined.

Social, economic and ecological consequences of Aral crisis are drastic. The Aral region suffers extreme sanitary-epidemiological situation and during the last 15-20 years the rates of infectious diseases have grown, especially the rates of typhoid, tuberculosis, viral hepatitis and cancer.

Similar problems may emerge in the Balkhash lake area.

Massive regulation of drainage network had negative implications. A number of dams, pools, ponds, which blocked sufficient part of flood flow, were built in lacustrine basins and riverbeds for watering purposes of cattle and irrigated rangelands without sufficient hydrological grounds. Only a minor part of reserved water was used rationally, the rest of it was wasted as a result of filtration and groundwater runoff. Many lakes dried out and mineralization level in the remaining considerably increased, which devaluated its drinking, fishery and recreational capacity. The water self-purification processes weakened and communal and industrial pollutions concentrations increased in the lakes and minor rivers, which lost sufficient part of surface run-off.

Suspension of intense floods at regulated rivers led to degradation of flood ecosystem: salinization of wetlands, loss of fertility of hayfields and tugai forests reduction.

Soil dehumification and salinity. Dehumification process is registered at all arable rangelands. Humisity decline is tied to irreplaceable loss of nutrients due to harvesting. Humus loss in irrigated soil results from regulation of river deltas drainage and desertification of surrounding territories, as well as irrigation erosion.

Dehumification brought 4,5 million hectares of non-irrigated lands to some level of desertification, 5,2 million hectares to moderate desertification and 1,5 million hectares to severe desertification. 0,7 million hectares of irrigated lands suffer dehumification.

The area good for sowing, not requiring preliminary land-reclamation activities reach 23,3 million hectares. The rest of the lands need special processing: saline soil melioration, saline soil reclamation, water and wind erosion prevention. According to the data from the Agency of the Republic of Kazakhstan on land management salinized and solonetz lands occupy 94,9 million hectares, which is equal to 42,1%. Soil erosion covers 30,5 million hectares -- 13,0 %.

Irrigated soil salinization as a desertification factor has two major aspects: solonetz deserts growth in inland basin and secondary salinization of irrigated lands. The specifics of desertification caused by salinization are connected to their zonal and structural diversity. The share of saline soil makes about 20 % out of the total area of arable irrigated lands. The situation with irrigated farming reduced gross harvest in 1,6-1,8 times.

Soil salinization of dried lakes and other reservoirs is another specific feature of Kazakhstan. Suspension or sharp reduction of irrigation leads to decline of underground water level, change of hydrological regime of soil formation, soil reclamation and desertification.

Soil and underground water pollution. The threat of chemical pollution of soil with specific substances resulting from chemical processing of rangelands, industrial wastes allocation, sewage discharges, atmospheric pollutions in cities and industrial centers has grown over the two last decades. Sewages from the cattle-breeding complexes also contribute to the soil pollution.

Underground water pollution is very common in Kazakhstan and is viewed as a factor, which affects lands desertification, secondary soil and vegetation salinization, and reduction of drinking water supply. Enterprises extracting minerals, chemical and other productions generating toxic wastes, irrigation bodies, cattle breeding complexes, municipal agglomerations, etc. pollute environment the most.

Man-caused desertification. Industrial and mineral fields development in Kazakhstan, accompanied by the transportation and engineering infrastructure construction, intense consumption and pollution of water and lands resources, produce direct and indirect negative impact on ecosystem. In addition to these impacts, there was registered a man-caused desertification in the form of toxic discharges and industrial wastes directly influencing vegetation.

Roads infrastructure also produced a man-caused implication. The total length of the roads in the Republic reaches almost 100 thousands of kilometers, while only half of those are coated with a hard surface, thus, 0,036 kilometers of all types of roads per 1 square kilometer, and 0,017 kilometers coated with hard surface per 1 square kilometer. Such dispersed roads network, on the background of a total availability of roads-free areas for motor transport led to chaotic movement of transport, as a result of which irregular roads became one of the sufficient factors contributing to desertification.

Railroads, oil and gas pipe lines, high-voltage electric lines are among the other types of linear infrastructure sufficiently affecting environment.

Specific forms of man-made desertification are found on the vast territories of space, military and former nuclear testing areas, which presently occupy more that 6% of the territory of the Republic. Moreover, the area of their influence will increase if the skyrocket lanes are included into it. The negative influences of the testing areas, apart from the direct lands impressments, are the drops of unburned in atmosphere rocket stages fragments and parts of other aircrafts, leakage of highly toxic rocket fuel at the places of launching and around fallen rocket stages, huge volumes of oxygen combustion and ozone layer disturbance at the moments of rocket launchings.

Violation of hydrological regime of rivers and water basins resulting from agricultural activities entailed a number of negative consequences. The rivers streams into the flood lands decreased or completely withdrew, hydraulic connection between surface and underground waters weakened and their level decreased. All of these contributed to the flood lands desertification, drying out and salinization of closed lakes. River deltas of such major rivers as Syrdarya and Ili also suffered from desertification. Areas of lake ecosystems decreased in deltas of these rivers, vegetation and soil degraded conditions for fish stocks reproduction deteriorated, animal kind altered. Drastic negative changes occurred in ecosystems of Aral Sea and Balkhash Lake. As a result of Aral and Balkhash floor baring and water level decline, the areas affected by wind erosion expanded.

One of the main negative consequences of desertification is exhaustion of bio-diversity, which took place due to the total disappearance of local population kinds and due to the reduction of their natural habitat and number, decrease of phytocenotic activities and reproduction capacities.

The animal kingdom typical for the Republic underwent sufficient transformations because of the man-caused factors leading to desertification. The fauna of the ground-based and in-soil insects, birds, mammals and other animals greatly suffered. Zonal steppe fauna in northern oblasts of the Republic is destroyed at almost 80%. Similar situation is observed at the steppe zone of Tien Shan and its foothills, where many kinds of insects-phytophagans, wild bees – pollinators of plants, predatory and parasitic arthropoda, small birds, reptiles and mammals completely disappeared in some places. Many kinds of animals (including unique endemic) reduced their natural habitat and number and are about to be included into the Red Book of Kazakhstan because of the rangelands in Tien Shan, Dzhungar Alatau and Tarbagatai rangelands as well as in the deserts of Taukum, Moiynkum, Saryesik-Atyrau, etc.

Major changes in fauna occurred in the suburbs of big industrial cities, on the territories of military zones and in the regions of mineral fields development.

The process of desertification sufficiently influenced the vegetation degradation.

Localized re-pasturing is observed in northern steppes around winter camps, settlements and cattle droves; decrease in vegetation cover in central and southern steppes is connected to the man-caused impact and unregulated roads network in addition to the re-pasturing.

The forests in Kazakhstan underwent intensive degradation over many years. In Northwestern Kazakhstan it affected mostly flood plain forests, in deserted area – saxaul bushes, in mountain areas – coniferous forests. There are forests transformation and change of their borders in highlands of the Northern Tien Shan and Dzhungar Alatau.

Severe man-caused pressure resulted in intensification of desertification of riparian vegetation. The sharpest transformations of riparian vegetation occurred in deltas and lower flood lands of rivers Ili, Syrdarya and Chu. In those areas the highly fertile reeds almost completely degraded.

Desertification led to a number of economic and social consequences, including:

Harvesting capacity and gross harvesting reduction;

Reduction of livestock and cattle breeding productivity;

Decrease of agricultural sector export potential;

Slow development of food and light industries;

Sharp reduction of tax returns from agricultural and processing sectors into the budget.

Statistical data proves negative tendencies observed in the agricultural economy. Those are mostly conditioned by the poor multi-layer reforming and restructuring, however the process of desertification places a separate negative impact on resources productivity in the Republic as a whole, while in the regions with severe desertification turns into the driving force leading to an economic crisis.

Imperfection of the current management, breach of distant rangeland practices, deficit of technical and financial resources contribute to unemployment and poverty incidents.

Negative social-economic processes in their turn intensify the process of desertification.

Current social environment in Kazakhstan is characterized by the migration of population from the areas of desertification, and the rate of the migration reaches hundred thousands of people annually. Deprived livelihoods of population, insufficient nutrition, poor medical care, lack of drinking water, sand and saline storms, resulting from ecological misbalances and environment degradation, led to a sharp deterioration of population's health, life expectancy reduction, decline in population growth, which is a sign of a demographic crisis.

The infants' mortality reaches a maximum in the regions of desertification. Ecological-sanitary pressure causes general development lagging of children, anemia, congenital abnormalities, mental illnesses and cardiovascular collapses.

4. Goals and Objectives of the Program

The main goal of the Program is to combat and prevent desertification on the territory of Kazakhstan.

The following objectives have to be implemented to achieve the goal:

The first phase (2005-2007 years):

Inventory and assessment of degraded lands;

Informing and engaging all population groups in the process of decision making in the area of combating desertification;
Design and implementation of the pilot projects on lands rehabilitation or prevention from their degradation;
The second phase (2008-2010 years):
Design and implementation of normative legal requirements and economical mechanisms of sustainable land management, which ensure reservation and rehabilitation of resource base;
Ensuring consolidated implementation of international ecological conventions;
Reducing the scale and preventing from further desertification and negative influence of droughts;
The third phase (2011-2015 years):
Integration of desertification combating measures into economic and social development of the country;
Combating and preventing lands from desertification and maintain their enabling and sustainable condition.

5. Main Directions and Implementation Arrangements

The Program implementation will target the following directions:

Sustainable natural resources management policy of formation;

Design of social-economic aspects of natural resources reservation and desertification prevention;

Research and informational support, promotion of desertification prevention;

International cooperation in the area of desertification prevention and consolidation of relevant conventions;

Coordinating activities of local authorities, land users, farmers and non-governmental organizations.

The main condition for achieving the goal of the Program is improvement of the effectiveness of the natural resources management, based on the balance of ecological and economical problems.

In course of desertification prevention it is necessary to undertake the measures on suspension of the man-caused consequences, such as exhaustion of the soil, extensive pressure on rangelands, deforestation and poor irrigation methods. At the same time main social-economic causes of the phenomenon need to be researched.

State strategy directed to sustainable social-economic development of the society is based on the state's ability to consider ecological priorities while taking agricultural or other decisions. Therefore, in order to implement an effective policy in the area of environment at the Republican, oblast and local levels, there is a need in building and bringing into effect a structured system of environment protection legislation, which conforms to the current requirements of the natural resources management legal and financial-economic standards.

In this context, design of a complex approach, which includes physical, biological and social-economic aspects of desertification and drought is needed. In particular, it is necessary to strengthen integration of activities on poverty reduction, combating desertification and mitigation of drought consequences into the policy of the sustainable development of the country.

The Program is directed to creating an enabling environment for a balanced management of resources and to enhancing economic activities, facilitating reservation and (or) rehabilitation of recourses base at all levels of government.

Phase-wise implementation of the Program envisages design of appropriate action plans of for each phase.

5.1. Formation of the Policy on Sustainable Natural Resources Management

Formation of the policy on sustainable management of natural resources:

1) Phase I (2005-2007 years):

implementation of the project on dry lands management in Shetsk region of Karaganda oblast;

assessment of exposure of Kazakhstan territories to desertification processes and mapping the lands subject to desertification and degradation on a scale 1:1 000 000;

development and implementation of the landscape maintenance of ecological scheme of combating desertification in the Republic of Kazakhstan;

research and assessment of biological diversity at degraded lands;

reduction of desertification growth on the rangelands;

improving the systems of the rational rangeland management, creating drilled rangelands in order to prevent desertification processes in Kyzylorda, South-Kazakhstan and Almaty regions;

development and implementation of pilot projects on rehabilitation and melioration of the secondary soil salinization in Kyzylorda oblast;

implementation of the project “Creating ECONET for a long term reservation of biodiversity in eco-regions of Central Asia”;

implementation of a pilot project “Land management in buffer zones of protected territories (North Kazakhstan)”.

Development of technologies of rehabilitation of degraded and exposed to desertification rangelands in Moiynkumy desert;

2) Phase II (2008-2010 years):

identification of the rangelands degradation centers, classification those into the zones and extent of battering, creating passports for pasturing and regulation of livestock and rangeland density;

developing saxaul forests protecting rangelands, drilled rangelands and hayfields, implementing rangelands circulation;

3) Phase III (2011-2015 years):

conforming to the technical norms and rules of rational lands management;

agricultural afforestation of land management;

facilitating the rational rangeland management depending on their renewable capacities.

Participation in implementation of the new technological projects on lands fertility rehabilitation.

5.2. Development of Social-Economic Aspects of Natural Resources Reservation and Combating Desertification

Development of social-economic aspects of natural resources reservation and combating desertification includes the following activities:

1) Phase I (2005-2007 years):

analysis of economic, political and demographic factors of desertification and poverty incidents; development of mechanisms of sustainable development at the local level;

building oasis systems of managing farming in desertification areas of Kazakhstan;

prevention of sand-saline drifts at the settlements in Aral area;

implementation of the small grants program on combating desertification for non-governmental organizations (RIOD-Kazakhstan network);

2) Phase II (2008-2010 years):

support of small farms formation;

raising awareness level of local communities in the issues of land desertification and degradation, environment protection;

improving economic mechanism of financing the management, protection and rehabilitation of natural resources, which includes activities on combating desertification (placing economic liability on owners and users of water, forests and rangelands to carry out rehabilitation activities, as well as on all non-agricultural entities of natural resources management for pollution and contributing to degradation of the environment);

inclusion into the budget the programs of activities at all levels on rehabilitation of degraded resources, outside the use of tenants and owners;

systematization of the current legal acts;

determining measures on increasing effectiveness of environment legislation;

harmonization of legislation on environment to the analogical legislation of the developed countries in the world taking into account the internationally accepted standards of environment protection, including desertification combat;

3) the third phase (2011-2015 years):

improving the planning system of environment protection activities, which includes social-economic, demographic, energy and information issues;

regulation of all aspects of combating desertification.

5.3. Research and Information Support, Desertification Combat Promotion

Research and informational support and desertification combat promotion will be implemented through the following activities:

1) Phase I (2005-2007 years):

creating the monitoring system and management of information on environment to promote sustainable land management;

assessment of desertification impact on population's health in Aral area;

analysis of the current state and research of degradation processes and desertification of rivers' deltas and flood lands ecosystems;

development of scientific methods of sustainable agriculture management for supplying population with ecologically clean products and combating desertification processes;

development of the concept for monitoring desertification using space information;

conducting a long term campaign at the national level to inform population on the aspects of desertification combat;

development of monitoring atmospheric and lands droughts in Northern Kazakhstan and assessing the natural risk associated with the grain production;

2) Phase II (2008-2010 years):

creating the complex monitoring system of desertification, integrated into the State Information System (SIS);

large-scale cartographical inventory of natural resources degradation;

adjusting and restructuring the previous projects on the rational rangelands management;

phytomelioration device and phytomelioration of deserted territories, exclusion unfertile and degraded lands from rangeland circulation and flooding;

supporting domestic production and pesticides formation;

involving a wide participation of agriculture, physics-mathematics, chemical, geological, technical sciences' representatives into the ecological modeling, system analysis and desertification processes forecasting, as well as into designing specific methods and approaches to combating desertification;

building capacity of technical and scientific research works in the area of combating desertification and drought consequences mitigation, carried out by the research institutions in cooperation with the regional and international organizations;

educating local population on fundamentals of agriculture with the use of training materials, adequate to the level of education and interests of the audience;

conducting seminars for farmers and workers in various economy sectors; trainings and debates at universities;

organizing public committees for consulting and informing population on the issues of desertification combat;

3) Phase III (2011-2015 years):

activation and use of mass media instruments in raising awareness among population on ecological problems. Mobilization of public opinion on the processes of desertification;

facilitating public access to the legal acts design and to the information on desertification;

working out educating programs and materials for educational institutions at all levels;

publications and distribution of brochures, information materials on the methods of prevention and combating desertification.

5.4. International Cooperation in Combating Desertification and Consolidation of Relevant Conventions

International cooperation provides a valuable opportunity in obtaining methodological, technical and financial assistance from the international community and gives impulse to combating desertification through the assistance.

The following activities will be implemented to strengthen the international cooperation:

1) Phase I (2005-2007 years):

preparation and implementation of inter-state activities directed to reservation of trans-border ecosystems balance;

formation of a Centre on combating desertification;

2) Phase II (2008-2010 years):

analysis and adaptation of the world practices and technologies in combating desertification;

strengthening cooperation in combating desertification within the framework of the Subregional program of activities on combating desertification in Central Asia, Regional plan of actions to promote sustainable development of highlands territories, Regional plan of actions on environment protection;

regional cooperation within the framework of the Thematic programs network in Asia;

creating approved reports and information collection procedures, methodologies of the sites and problems inventory, developing indicators, standards and other relevant to the UNCCD, Convention on biodiversity, Framework convention on climate change data;

3) Phase III (2011-2015 years):

implementation of pilot projects on relevant conventions, seeking practical, experimental (methodological) and presentation (informational-promotional) goals;

mobilization of external resources in the form of a technical, expert and financial assistance to implement Convention to combat desertification.

5.5. Coordination of Activities of Local Authorities, Land Users, Farmers and Non-Governmental Organizations

In order to coordinate the local authorities, land users, farmers and non-governmental organizations activities in combating desertification the following events will be implemented:

1) Phase I (2005-2007 years):

informing population on the goals and role of the Convention to combat desertification and the Program's objectives;

organization and conducting public campaigns, events targeted to combating desertification with participation of local governments bodies, non-governmental organizations, ecologists and community;

promotion of links between the local non-governmental organizations and the non-governmental organizations in the countries UNDCC members;

collecting information on the desertification processes;

working out action plan on implementation of the Program on combating desertification in the Republic of Kazakhstan for the second phase;

working out action plan on implementation of the Program on combating desertification in the Republic of Kazakhstan for the third phase;

2) Phase II (2008-2010 years):

temporary suspension or termination of activities causing harm to land resources;

agricultural afforestation of the reserved lands and non-agricultural lands;

ensuring maximum involvement of community in the decision-making process within the framework of the UNCCD;

working out the national action plan of non-governmental organizations and its integration into the Program;

3) Phase III (2011-2015 years):

desertification problems integration into the secondary schools curriculum;

collection and analysis of data on lands degradation; identification of degraded areas in order to prevent desertification considering local natural, social-economic specifics.

6. Necessary Resources and Financial Sources

The Program activities implementation, requiring financial expenditures will be covered by the Republican budget and will involve resources of international organizations and donor countries in the form of technical and consultative assistance.

Total amount needed for implementation of the I phase of the Program (2005-2007 years) is 3135,85 million tenge, including:

122,2 million tenge from the Republican budget:
2005 year – 34,31 million tenge;
2006 year – 40,73 million tenge;
2007 year – 47,16 million tenge.
3013,65 million tenge of international grants:
2005 year – 826,675 million tenge;
2006 year – 1133,975 million tenge;
2007 year – 1053 million tenge.

The scope of the financing from all the sources will be adjusted while preparing the budget for the following year.

The scope of financing for the following phases of the Program implementation will be determined while preparing the activities plans for the appropriate phase.

7. Expected Outputs

The outputs of the Program will be:

1) Phase I (2005-2007 years):
Inventory and assessment of degraded lands;
Informing and engaging all population groups in the process of decision making in the area of combating desertification;
Development and implementation of the pilot projects on lands rehabilitation or prevention from their degradation;
2) Phase II (2008-2010 years):
Development and implementation of normative legal requirements and economical mechanisms of sustainable land management, which ensure reservation and rehabilitation of resource base;
Ensuring consolidated implementation of international ecological conventions;
Reducing the scale and preventing from further desertification and negative influence of droughts;
3) Phase III (2011-2015 years):
Integration of desertification combating measures into economic and social development of the country;
Combating and preventing lands from desertification and maintain their enabling and sustainable condition.
