Association of Landscape Planning Development (Public Association) Project Proposal, developed in the framework of Community-Based Adaptation to Climate Change Programme Проектное

Project Information

1.Project Title:	Demonstration of Adaptive Land Management under Climate Change Conditions
2.Project Site:	Tselinogradsky District, Akmola Oblast, Priozernoye rural community
3.Proponent:	Association of Landscape Planning Development (Public Association). The main objective is assistance in landscape planning and land-use development in the Republic of Kazakhstan
4.Project Objective:	Development of adaptive land-use in the Prizernoye rural community and demonstrating its ecological, economic and social viability in climate change conditions
5.Authorised Representative:	Ryskali Eserkepov – Chairman of the Association of Landscape Planning Development (Public Association) Vladimir Tel'nov – expert; 87015196539, 87015340163; email vlad_telnov@mail.ru
6.Co-operating Organisations:	Ivan Sauer , 87015225507, 87165117422
7.Start-Up Date:	2010
8.Project Period:	18 months
9.Total Project Cost:	$87750, including funds fron AIKUO and community co-financing ($50000)
10. Amount Requested:	37750 USD
11.Brief Project Description:	The project aims to develop and implement adaptive land use, including soil and water conservation management and a system of land-use adapted to environmental landscapes, designed to conserve and renew natural fertility, create conditions for the sustainable management of both summer and winter precipitation, which will provide land-use stability against the negative effects of climate change.

The **Project Outcome** is**:** to alleviate the negative effect of climate change on farming through overcoming risks and community vulnerability. The aforementioned goals will be attained by the following project measures.

Outcome 1: Restoration of existing land infrastructure
Output 1.1. Reconstruction of destroyed dams and dykes; restoration and reinforcement with concrete, fences etc.
Output 1.2 Reconstruction of culverts. Cleaning or replacing culvert pipes.
Output 1.3. Reconstruction of existing water guiding shafts; resealing shaft leaks and pressure outlets.
Outcome 2: Environmental stabilization of the landscapes
Output 2.1. Pasture formation at low-productivity lands withdrawn from grain cropping. Plowing, sowing and cultivating perennial grasses Output 2.2. To develop a landscape-environmental plan of the territory: along the water courses; at regenerated areas of swampy saucer-shaped hollows.
Output 2.3. To diversify land-use.
Outcome 3: Agricultural landscape management
Output 3.1. To develop an agro-landscape zoning map.
Output 3.2. To calculate water balance.
Output 3.3. Climate adapted agricultural land structure.
Output 3.4. Plough-land management project (scheme).
Outcome 4: Improved community capacity to address climate change risks to agriculture

Output 4.1 Improved infrastructure and community institutional capability.
Outcome 5: Dissemination of new land management strategy on a local level
Output 5.1. Incorporating lessons learned and CC adaptation techniques in local district development plans; publishing experience in local media.
Output 5.2. Development of recommendations for soil-conservation planning.
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1. Rationale

1.1. Community Context

The community consists of inhabitants from the villages of Prizernoye, Zeleniy gay, Sadovoye in Tselinogradsky District, Akmola Oblast. The total number of people benefiting from the project is more than 1740. Their main source of livelihood is cereal production. Men make up 48% of the total population, women 52%. Men between between 16-62 years old make up 33% of the total population, women between 16- 62 years old make up 32%.

Population's ethnic composition on 15.04.2009

№	Nationality	Total
1	Russians	743
2	Belarusians	251
3	Ukrainians	148
4	Poles	152
5	Germans	116
6	Kazakhs	115
7	Tartars	71
8	Moldavians	22
9	Azerbaijanis	21
10	Other	101
Total		1740

1.2. Climate Context

The land used by Priozenoe rural community is situated in a zone of extreme continental climate with long winters and short summers. The duration of the frost-free season fluctuates from year to year ranging from 58 to 133 days. The total positive temperatures for the entire warm period reaches 2600-2800, that is fully sufficient for the ripening of spring wheat and grain for fodder. The total annual rainfall fluctuates from 284-44mm, and is on average 365mm. Atmospheric precipitation falls in the spring-summer period (May-August), approximately 47.4% of total annual precipitation, soil moisture accumulates in general due to winter precipitation. It has been established, that 80-160mm of precipitation falls throughout the winter season. Analysis of changes in climate conditions in Akmola oblast based on long-term observations on the temperature of the air from 1950 to 2006 at the weather stations Astan, Atbasar and Kokchetav has shown that annual warming for the most post occurs due to increasing air temperature in the cold season. Deviations in average monthly air temperatures in the period 1981-2006 when compared with the average temperature before 1980, is 2-4° in January, in July does not exceed 0.5-1.5°. The increase in average annual air temperature on average accounts for 1.1° a decade. The difference in the average precipitation over the period 1981-2006 from long-term annual average before 1980 has decreased in the winter season from 5 to 15 mm (5-20%) and in the summer season has increased from 7-12mm (2-6%).

Analysis of the change (difference) in air temperature in the Akmola oblast area over the period 1971-2000, when compared to the period 1931-60, has shown an increase in air temperature of more than 2°. Climate change is connected with significant rises in temperature against the backdrop of considerable changes in the amount of precipitation

The increase in average annual winter air temperature and this trend for decreasing atmospheric precipitation in the warm season and for increasing precipitation in the cold period could lead to early depletion of stored soil moisture and a decline in summer precipitation, on which farm crop yields are highly dependent. Changing hydrothermal conditions during the growing season influence the occurrence of various cereal crop diseases, and as a result grain and harvest quality is declining. Harvest losses due to poor weather conditions (drought, dry hot winds, late spring and early autumn frost and other weather phenomena unfavorable for commercial grain production) in some years has reached 50% to 70%. In the last twenty years, four or 20% were severely drought afflicted (1991, 1993, 1994, 1995), five or 25% were drought afflicted, nine or 45% were moderately drought afflicted (1986, 1987, 1989, 1990, 1992, 1999, 2000, 2003), two or 10% were favorable (2001 and 2002). The problem is exacerbated due to climate change. One can suggest that drought frequency will grow, due to the dangerous effect of climate change on agricultural activity.

Basic Climate Indicators in the project area.

- Average January air temperature – 19°.
- Average July air temperature – + 20°.
- Total temperature for the warm season reaches 2600-2800^{o}
- Duration of frost-free season - minumum 58, maximum 133 days
- Average precipitation - 365mm a year, fluctuation from 284mm to 455mm
- Dominant wind direct in atmospheric drought - south-west. A increase in dry winds and dust storms has been observed.
- Heavy-loam light-clay black earth carbonates make up the majority of soil cover
- Atmospheric precipitation falling in the spring-summer season (May-August) is approximately 47.4% of total annual precipitation

- An air temperature increase of more than 2^{o}C in the period 1971-2000, compared with 1931-1960.

Climate change planning in North Kazakhstan (National Intelligence under the United Nations Framework Convention on Climate Change):

- Increase in annual and seasonal air temperature
- A trend of decreasing precipitation;
- Temperature increases, particularly in the winter season;
- Decreased numbers of frost days and increased numbers of hot days;
- Increased aridization and evaporation.

1.3. Impacts Context

Climate change has had an acute impact on the disadvantaged rural population. The problem of climate change could lead to significant changes in the lives of community members, and their working and agricultural activities. This is one of problems to which it is necessary to pay attention and begin to develop measures of adapting to its effects - primarily food safety, cereal crop production, land productivity, and ecosystem preservation in general.

Plowed lands are being used for single-crop spring wheat farming without crop-rotation and differential cultivation. Current planning is not capable of water retention (spring snow melt) and does not provide ecologically sustainable land management to counter the degradation process, which means it will not create an environment for sustainable farming in climate change conditions. Crop rotation, field, and allotment boundaries do not correspond with natural barriers (landscape boundaries), the structure of land holdings is not connected with the morphologic structure of the landscape, which in the long run has led to land degradation. Such area management is not equipped for agro-technical device differentiation and the farming of cereal crops. Community farming assessment and analysis has shown that the main

barrier to successful and commercially profitable industrial and economic activity in farm produce cultivation (spring crops) in risky land-management conditions is land degradation (water and wind erosion) which is exacerbated in climate change conditions

Climate change exacerbates and leads to the following negative consequences:

- Increased farmland erosion and decreased productivity;
- Decline in harvest yield and grain quality
- Change of the hydrographic regime of open water

The majority of the territory of Priozernoye rural community is made up of black earth carbonates of heavy-loam and light-clay soils.
The humus in these soils has decreased by 25-30% since absorption. .

A significant area of plough-land is located on moderately sloping ground. The incline has a small gradient (0.5^{o} – 76%) but extends 5-12km. The level of soil break-up in the area is an indicator of the character and intensity of erosion. On average, soil break-up makes up 0.5 km in 1km, whereas on an average area of land-use, this indicator is equal to 1.9 in 1km. Water erosion is the leading cause of degradation in the area

The large drainage area of the slopes and the slow defrosting of the soil in the snow-melt season encourages the formation of a surface stream of melt water. Therefore sloping lands experience the negative consequences of aridization to a greater degree than level farmlands and are especially vulnerable to the risks connected with climate change. With a severe moisture shortage for growing basic varieties of spring wheat, the losses of 30-50% of winter precipitation through melt-water surface flow, is one factor aggravating farming.

Climatic factors, the increase in temperature and decrease in precipitation, have had a negative influence on crop yields, the undertaking of field work etc. This gives rise to the need to introduce changes in land-use management strategy, primarily to create conditions for the efficient use of not only summer but winter precipitation. Otherwise, the process of climate change, accompanied by reduced land productivity, and water supply shortage, may lead to members of the community being without a source of income. Therefore the main thesis of the project is area soil conservation management, which will provide sustainable land-use against the impact of climate change.

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1.4. Project Approach

The Project is being initiated and developed with the Association of Landscape Planning Development (Public Association) and the local community of the village of Priozernoye. The current approach of implementing the project from the bottom-up strengthens the feeling of ownership and responsibility on the part of local communities. The project is focussed on switching to ecologically stable land-use and contributes to benefiting global ecology in the fight with land degradation. Climate change in its turn demands changes to the current land-resource management and use practices

Therefore the project is directed towards introducing new approaches to land-resource management. The main focus of the project is on the problems of water conservation, reducing the risks of increased pasture-land degradation, and humus and harvest loss caused by climate change.

Introducing ecologically sustainable land-management using water-conservation technology will allow the agricultural sector to adapt to climate change and also increase the farmland sustainability in conditions of increased aridization.

Therefore the project proposes not only restoring elements of the existing infrastructure, but also implementing water and soil conservation measures of community land-use for conserving moisture, preventing water and wind erosion and creating conditions not only for producing commercial grain but also creating recreational conditions for local inhabitants and conserving biodiversity. For this, the project sets forth: the establishment of optimum ratios of land-use, the creation of an ecological framework, the arrangement of the territory's farmlands - the design of uniform fields and allotments. The main criteria

for normalizing the burden on landscape and one of the effective and efficient means of preventing ecological strain and preserving agro-potential - the establishment of a sustainable ratio of elements of the ecological infrastructure - the ratio of land and agriculture (plough-lands, fields, pastures) and also optimal boundaries for its intensive and conservative use.

Ultimately the project is directed towards putting into practice of principles for sustainable community land resource management, including measures, that lower the risks caused by climate chance. This is caused by the fact that climate change leads to a higher rate of soil erosion, reducing the fertile layer by lowering humus content. destroying the water and hydrogeological regime and ultimately it reduces the possibility of ecosystem self-regulation and sustainability. Similar changes in turn demand changes in current land-resource management practice and their use.

Therefore the project is orientated towards introducing new approaches to land-resource management. The emphasis is on problems of water conservation, reducing the risk from increased soil erosion and humus loss caused by climate change.

The introduction of ecologically sustainable land-use, using water-saving technology, will allow the agricultural sector to adapt to climate change and also will increase the soil sustainability to soil to wind and water erosion in conditions of increased aridization in the territory

In connection with this, the project activity will include the following measures, which will lower community member dependence on climate aridization and will be directed towards the following risks of climate change:

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Climate Change Forecast	Impact on community and ecosystem	Project measures directed against climate change
1.Reduced annual rainfall	Reduced water availabiliy, a decline in crop-yield, and soil fertility	- Application of water conservation technology, - Surface flow regulation measure to allow increased soil moisture storage and protect the soil from erosion and conserve its fertility
2.Increased risk of drought and dry winds	Increased evaporation, soil cover degradation, soil aridization and increase salinification and erosion	- Implementation of adaptive land cultivation methods; - Greater conservation of degraded farmlands;
3. Increased summer and winter temperatures	Decline in climatic conditions favourable for sustainable lanf useСнижение	- - Introduction of modern land cultivation methods (introduction of crop-rotation, farm crop cultivation of farm crops applying minimal technology ; - Optimization of agrotechnical measures connected to climate change.

2. Community Ownership.

2.1 Project Formulation

The project is focused on putting into practice new principles of land-resource management and creating a model of climate-adapted land use in the Priozernoye rural community. The main emphasis is on the problems of lowering the risks of climate change.

The main project concept was formulated as the result of discussion with landowners and agricultural specialists living in Priozernoye. During the project-planning stage the community was involved in the discussion of all project measures and took part in the Vulnerability Reduction Assessment (VRA)

The proponent's main activity is to assist in developing land-use planning in the Republic of Kazakhstan. It has the aim of land-use adjustment, land adaptation to environmental conditions based on soil and water conservation planning aimed putting into practice sustainable land-resource management principles, including measures to lower the risks caused by climate change. Cereal production, as the main source of community subsistence, in climate change conditions requires the introduction of new approaches of land-resource management to provide soil resistivity to wind and water erosion. Implementing principles of adaptive, soil and water conservation measures for land use is such an approach.

Adaptive measures will include

- Change from monocultural cereal production to diversification.
- Introducing soil and water conservation measures for reducing the growth of degradation
- Greater conservation of degraded plough and pasture lands
- Application of water conserving technologies, particular at winter due to the shortened winter season (snow cover);
- Optimizing timings for plough-land use due to climate change;
- Introducing modern agro-technical practices;

Partners participating in project development:

a) Prizornoye rural community (executor):

- Initiation of project components through working out the main areas of focus in adapting the community to climate change;
- Provision of information about actual farm management in both private and community ownership of the mean of production;

b) Association of Landscape Planning Development (Public Association) :

- Helping the community to introduce soil and water conservation management;
- Procedure consulting on project initiation
- Providing procedure development to members of the community;
- Providing experts to help put together and implement the project;
- Putting together the project together with the community;
- Financial estimates;
- Project conversion in real terms;
- Participation in seminars.

c) Akimat Rural District:

- Organize community service;
- Participation in seminars;

Actions for involving the local community:

- Widening the scope of action and competency of local authorities and increasing officials', inhabitants' and farmers' awareness of adaptive land-use in climate change conditions through conducting teaching seminars and preparing and disseminating corresponding written publications.
- Initiating the process of integrating business owners with the local community so that the project is undertaken by people as their own; their real participation in it should be maximum, as this is one of the defining conditions of subsequent stability for any project.

2.2. Project Implementation.

The community will participate in implementing the project on a constant basis. Community members will take part in developing, discussing and approving the project. After project approval they will implement the planned measures together with the proponent.

Association of Landscape Planning Development (Public Association) will bear responsibility for drawing up project specifications and estimates, monitoring the proper use of grants received and implementing the planned measures to the fullest extent, that includes their necessary funding and assumed organizational implementation measures. The Association of Landscape Planning Development will work together with the community to deliver the necessary project results (points 1.3.1, 2.1.1, 2.1.2, 2.2.1, 2.3.1, 2.3.2, 3.1.1, 3.2.1, 3.2.2, 3.3.1, 3.4.1, 3.4.2, 3.5.1, 4.1.1, 5.1.1, 5.1.2, 5.2.1).

The rural community of Priozernoye will be required to provide a technical (a contribution in kind in the form of providing technology for implementing measures, payment for corresponding specialist work, providing the necessary reference data e.t.c) and financial contribution for separate project measures (points 1.1.1, 1.2.1, 1.3.1, 2.1.1, 2.1.2, 2.2.1, 2.2.2).

2.3. Phase-Out Mechanism, Sustainability

The ultimate aim of the project is to ensure its sustainability, that is, the possibility of ensuring the project is self-sufficient from an economic, social and financial point of view, after funding from grant-givers comes to an end.

The main aim of the project is to demonstrate new approaches and methods for the sustainable land-resource management on a local level. Demonstrating implies that others are able to see what was done, how it was done, what was successful and what was not. Therefore the outcome of the project is to disseminate this information to wide range of people who could repeat its ideas and principles.

In other words, the project's most important success is consolidation all the knowledge and lessons learnt during its implementation. After the end of all project measures, the proponent, together with the local community, will assess the results of the project and draw up a report on the project's completion. The report will include all interesting aspects of the project, positive and negative lessons. The knowledge gained will be documented for subsequent dissemination among other communities of the Republic Kazakhstan and interested partner organizations. Precisely through assessment and dissemination of experience, the Association of Landscape Planning Development (Public Association) will try to attain project sustainability.

The Association of Landscape Planning Development (Public Association) will carry out various community training programmes on the themes presents. This decision is based on the understanding that taught community members will bear full responsibility for phase-by-phase execution of project measure during the first 12-15 months of the project and continue to implement the work in project completion. Therefore one of the basic outcomes of the project is to help society understand and undertake those recommendations and methods of land-resource management, which are provided for by the project and learn their potential to work independently.

With the aim of analyzing the success of implementing the project and assessing it at the completion stage and its potential for independent development, a system of qualitiative and quantitive indicators for each outcome will be worked out by the proponent at the first project stage. The measurement unit, the information source, information gathering methods and analysis and the person, responsible for its undertaking will be defined in the framework for each indicator,. The success of implementing the range of project work depends on how correctly these indicators are initially defined and formulated.

In order to ensure the aforementioned mechanisms are sufficiently sustainable in the long term, the following organisational systems are suggested by the proponent to support the work initiated by the community

- Periodic training with all groups of the community, including school children;
- Attracting more active community members to share their experience of introducing adaptive land use.

Gender Aspect of the Project:

In accordance with international requirements, (in particular the UN Convention 'On the Elimination of All Forms of Discrimination against Women, the Beijing Platform for Action, the 3rd Millennium Development Goal) present-day management should include gender guidelines. The actual implementation of the project will be aimed at achieving male and female equality in all project measures, at overcoming all forms of discrimination on the grounds of sex, at creating prerequisites and necessary social conditions for a fuller realization of the natural abilities of women and men in all project activity and at creating conditions for the full realization of human potential.

3. Proponent Description.

3.1. Organization's background and Capacity

The Public Association has been created specifically for landscape planning development in the Republic of Kazakhstan. Landscape planning in the area of agricultural producers is considered one of the basic mechanisms of overcoming the ecological problems, connected with desertification and land degradation, caused by human impact. The Public Association's creation has been caused by the lack of state support for land use planning in this region. The specialists of the Association of Landscape Planning Developments have a vast experience of project work in planning land-use management on a landscape

basis and are interested in disseminating their knowledge through putting into practice the principles of sustainable land-resource management. The regulatory authority is the board; the chairman of the Association of Landscape Planning Development has direct control. The team has a vast experience of planning for different forms of land-use in different natural zones of Kazakhstan

3.2. In addition to activities of the current project for farms and specialists in the village of Priozernoye, they will conduct information seminars and training and disseminate material regarding sustainable land use.

3.3. The rural community and its leader Ivan Sauer have showed the initiative to implement this concept. In the village of Priozernoye preliminary work has been carried out, interested partners have been found, the support of the Akima rural community has been received, and the necessary information for developing the project concept has been gathered.

The Association of Landscape Planning Development (Public Association) is a non-commercial organization in the form of a public association, formed as the result of the free will of the citizens. The aim of its activity is to assist landscape planning development in Kazakhstan, by providing social, educational, financial and other such help as well as various other services.

To implement its stated objective, the Association carries out the following activities:

Participation in tenders for state grants;

Organisational and financial support for projects connected with the development and introduction of landscape planning

Assistantence in implementing innovative projects for landscape management in different regions of Kazakhstan;

Educational Activities;

Editoral-publishing activities in producing specialist literature;

Providing consultant activities in landscape planning;

Attracting international and national scientific research centers, institutes etc to solving the problem of landscape planning development.

4.0. Project Description

4.1. Objective, Outcomes and Planned Outputs

Project Aim: Implement adaptive land-use in the rural community of Priozernoye and demonstrate its ecological, economic and social viability in climate change conditions.

Outcome 1: Restoration of existing land infrastructure			
	Output 1.1. Reconstruction of destroyed dams and dykes;		
	Output 1.2 Reconstruction of culverts		
	Output 1.3. Reconstruction of existing water guiding shafts		
Outcome 2: Environmental stabilization of the landscapes			
	Output 2.1. Pasture formation at low-productivity lands withdrawn from grain cropping.		
	Output 2.2. To develop a landscape-environmental plan of the territory		
	Output 2.3. To diversify land-use.		
Outcome 3: Agricultural landscape management			
	Output 3.1. To identify various land categories according to the cultivation conditions of grain crops		
	Output 3.2. To calculate water balance.		
	Output 3.3. Optimization of the agricultural land		
	Output 3.4. Plough-land management		
	Output 3.5. Project conversion into real terms		
Outcome 4: Improved community capacity to address climate change risks to agriculture			

	Output 4.1 Improved infrastructure and community institutional capacity.		
Outcome 5: Dissemination of new land management strategy on a local level			
	Output 5.1. Incorporating lessons learned and CC adaptation techniques in local district development plans; publishing experience in local media.		
	Output 5.2. Development of recommendations for soil-conservation planning.		

4.2. Timetable (2010-2011).

	2010												2011							
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
Output 1.1. Reconstruction of destroyed dams and dykes;																				
Action 1.1.1. Lease bulldozer, transport rocks and slabs, put them in place																				
Output 1.2 Reconstruction of culverts																				
Action 1.2.1. Overflow pipe acquisition a) Lease digger b) Lease bulldozer c) Acquire pipes																				
Output 1.3. Reconstruction of existing water guiding shafts.																				
Action 1.3.1. Lease bulldozer, transport rocks and slabs for reinforcing eroded canals a) Lease bulldozer b) Lease motor transport																				
Output 2.1. Pasture formation at low-productivity lands withdrawn from grain cropping.																				
Action 2.1.1. Acquire perennial grass seeds, fuel, pasture formation																				
Action 2.1.2. Lease bulldozer Level gullies a) Lease bulldozer																				
Output 2.2. To develop a landscape-environmental plan of the territory																				
Action 2.2.1. Acquire perennial grass seeds																				
Output 2.3. To diversify land-use.																				
Action 2.3.1. Introduce crop areas adapted to the climate Consultation of specialists																				
Action 2.3.2. Recommend adaptive soil cultivation methods (subsurface plough cultivation, para-plowing, snow retention etc.) Consultation of specialists																				

Output 3.1. Identify various land categories according to the cultivation conditions of grain crops																				
Action 3.1.1. Output 3.1. Identify various land categories according to the cultivation conditions of grain crops a) Conduct fieldwork research, map preparation																				
Output 3.2. To calculate water balance.																				
Action 3.2.1. Assess unproductive losses on evaporation, overflow spillage and drainage. a) Conduct fieldwork research, balance calculation																				
Action 3.2.2. Validate parameters and locations of hydro-technical anti-erosion facilities. a) Conduct fieldwork research, balance calculation																				
Output 3.3. Optimization of the agricultural land.																				
Action 3.3.1. Reduce plough-land in the total balance of agricultural lands to 70-75% due to the withdrawal of low-productivity rubble and stony soils (50 ha), saline soil (100 ha) highly eroded slopes (120 ha), unusable landscapes (800 ha), swampy soils (400 ha) a) Conduct calculations on agricultural land optimization																				
Output 3.4. Plough-land management																				
Action 3.4.1. Implement crop-rotation to different land types at the fields and operating sites																				
Action 3.4.2. Field and soil protection through crop-rotations																				
Output 3.5. Converting the project into real terms																				

Action 3.5.1. Project conversion into real terms. Boundary mark and plough boundary determination a) Compilation of project conversion layout and project conversion																			
Output 4.1 Improved infrastructure and community institutional capability.																			
Action 4.1.1. Community awareness through training in potential consequences and risks associated with climate change; Promotion of sustainable farming practices on the community level; raining of the community members to seek and apply traditional and alternative land tenure practices; publish information brochures																			
Outcome 5.1: Project results inform climate change risk management in other communities as well as national and local government																			
Action 5.1.1. Study of practical experiences in the adaptation to soil fertility reduction and the loss of water supply under the growing aridization conditions; Project results inform local population adaptation to climate change risks in other rural communities, as well as local and national government Demonstration seminar																			
Action 5.1.2. Monitoring, advocacy and dissemination of the new arable land management strategy among agricultural producers, including farms of North Kazakhstan, on the national and local levels. Demonstration seminar																			
Output 5.2. Recommendations for soil-conservation planning.																			

Action 5.2.1 Development of recommendations for soil-conservation planning.																					

4.3. Risks and Barriers.

Barriers to the implementation of the project could be a lack of necessary understanding among agricultural goods producers for introducing new methods of land-use management, the absence of state legislation in this area and funding for land-use planning projects, which are necessary, considering the technical complexity and high level of risk and timeframe needed to implement the project proposals. Therefore the project will ensure advocacy and dissemination of the new arable land resource management strategy among agricultural goods producers, including farm owners of Northern Kazakhstan on a state and local level. The project's effectiveness will be monitored and adjustments made as necessary.

Trends over the last few years have shown that cultivation areas have constantly increased in connection with the demands for food-supplies both in and outside of the country and with the growing material and technical agricultural base, although because of intense agro-ecosystem degradation, soil erosion levels, over-grazing level, and the disturbance to the ecological balance, a reduction in cultivation areas is necessary as the main factor for green land use.

Among the risks of near-future one must draw attention to soil quality. On account of climate change conditions in agriculture, we are facing a problem of worsening soil quality and a decrease in its natural fertility. The absence and inadequacy of investment into supporting land fertility and the fact ecological requirements on land-use are not abided (that is the current practice of land-use management) is leading to depleting natural potential and an increased problem of sustainable agricultural production in the long term.

Another risk is the lack of regular soil-content assessments, which it would be possible to use as agricultural indicators for agriculture. Meanwhile the importance of processes such as soil erosion for agriculture is crucial. Negative ecological processes are becoming one of the main reason for reduced pasture fertility. All-out agricultural land degradation is occurring as the result of unsustainable use and its negative effect, which has widely developed in connection with drastic cuts in measures to defend valuable lands from water and wind erosion, water logging, swamp formation and other processes.

In this way, changes to climatic conditions in the country's agriculture inevitably run into the general decline in the village's ecological situation in the form of large-scale agricultural pasture degradation, worsening soil quality, and reduced fertility. Thereby significant efforts and huge investments in soil quality recovery and security are needed. Large-scale erosion, aridization and desertification, soil compaction, salification and other negative processes are the manifest results of climate change in the agrarian sector. Optimistic figures for an increase in crop-yield and general agricultural production, put forward in projections could be adjusted down due to the developing agricultural degradation in the village

Climate change and the consequences of general environmental impact of farming have produced new demands on the institutional structure of the agrarian sector. We consider here the basic social barriers, which, alongside the ecological ones, can hamper the management of the environmental impact of farming as a result of climate change. Here the important problem has become the worsening 'quality' of the rural population, its reduced potential to adapt to the sufficiently radical changes in agricultural conditions. The rural population of Kazakhstan has decreased over previous decades. Among generational trends, a sharp reduction in the proportion of the younger generation has been clearly seen in the rural population. Such a trend is leading to the growth of 'older' generation; the current rural population is rapidly aging. The traditionally (since the 1960s) higher mortality rate is another feature of rural demography. The mortality rate in rural areas to a significant degree is connected with injuries, fatalities, poisonings, that is factors which indicate social problems. As a rule, such problems lead to low motivation among the population.

In such a way, the demographic background of the agrarian reforms being carried out is an aging, badly motivated agricultural population with a low potential for social mobility. The possibilities for such a population to adapt to the severe conditions, which are the result of climatic change, to create new systems of agriculture and land-use management are severely limited. As a result, instead of an improvement in the agrarian situation in new climatic conditions, the rural population of Kazakhstan could come up against a recurring crisis.

One of the consequences of reform has been a decline in qualified workers with basic agrarian sector specialization. If these negative social trends in the village continue, then it would seems unrealistic to hope for increased agricultural productivity and effectiveness in climate change conditions.

4.4. Monitoring and Evaluation Plan.

Project activity evaluation will be conducted at the project planning stages, in the middle and at the end of project activity.

Adaptive Potential

Over the course of implementing the project, meetings will local community members, participating in the project activity, will be conducted. These meetings have been planned to take place 3 times (in the middle and at the end of 2010, and in 2011 after the completion of field work). These meetings are planned in activities of the project. Indicator assessments will be produced at the second and last reporting periods.

Global Environmental Benefit (GEB)

Global Environmental Benefit Indicators
Land Degradation

Increased land area under sustainable land-use (conservation of degraded lands, flattening of gullies, channel formation and creation of a ecological area framework; optimal land ratio - pasture, meadow, plough-land; by the presence and area of the ecological framework; by the proportion of croplands and cultivated crops facilitating improved ecological stability and renewed soil fertility).

Project activity implementation will be measured by the following indicators: the area of degraded lands renewed in the project framework (1133 ha), the area of flattened or plugged gullies (3 ha), the area of pasture formation (50 ha), the area of saucer-shaped hollows removed from plough lands , the quantity of new technologies employed to fight land degradation

Livelihood Indicator
Livelihood

1. Number of individuals benefiting from the implementation of the GEF Small Grants Programme Project: 1740 people will benefit from the implementation of the project

UNDP ADAPTIVE INDICATORS:

The project will be evaluated using the following indicators from the country programme strategy AIKUO,

1 Quantity of measures introduced to reduce the risks that are caused by climate change and are included as part of the measures for sustainable natural resource - 1;
2 Quantity of approaches certified for sustainable land resource management for improving both the life of the local population and resource security - 1;
3 The area, on which sustainable use of land resources is implement - 10835 ha, including 9382 ha of plough-land
4 Quantity of participants (families) benefitting from sustainable resource management measures (both increased income or food security etc.) 1740

4.4.1. Intital VRA Analysis. (The Vulnerability Reduction Assessment)

A group of project consultants visited the village Priozernoye several times (10 June 2008, 25 November 2008, 10 February 2009 and conducted discusssion with village initiative group, involved in the adaptive land-use project. The following questions were discussed in their conversation::

a.) How serious is the current effect of climate change on farming in your community?
b.) If the negative effects of climate change become the norm, how seriously will this influence your livelihood when using existing land-use management practices?
c.) How serious are the barriers to introducing an adaptive system of land management?
d.) How certain is the community that new methods of land-use management will reduce the risks of climate change?

Vulnerability Reduction Assessment Reporting Form for the Project: Demonstration of Adaptive Land Management under Climate Change Conditions

Reasons for a positive answer	**1. How serious is the current effect of climate change on farming in your community?**	*Reasons for a negative anwer*
1. Decreased Precipitation 2. Increased summer temperatures 3. Appearance of dust storms 4. Development of water erosion 5. Formation of gullies, mud-holes, decreased technical productivity and soil	**4,0** **0** 4; 3,5; 4,5; 5; 5; 4; 3,5; 4,0; 4,0; 4,0 **5** How could this assessment be corrected? 1.By introducing new methods of land management	There were no negative answers.
Reasons for a positive answer	**2. If the negative effects of climate change become the norm, how seriously will this influence your livelihood when using existing land-use management practices?**	*Reasons for a negative anwer*
1. Increased land degradation, reduced crop-yields, reduced income	**4,6** 4,6; 4,6; 4,8; 4; 4,6; 4,6; 4,2; 4,4; 4,6; 4,6 **5** How could this assessment be corrected? 1.By introducing new methods of soil and water conservation planning	There were no negative answers.
Reasons for a positive answer	**1. How serious are the barriers to introducing an adaptive system of land management?**	*Reasons for a negative anwer*

1. Lack of legislative base in the context of land management 2. Ignorance of new planning methods 3. Lack of state support for land-use work	**4,8** **0 5** 4,6; 5; 5; 4,6; 5; 4,6; 4,6; 5; 4,8; 4,8 How could this situation be corrected? 1. Drawing attention of the community and state to the neccessity of adopting legislation on land--use 2. Increased awareness and legal knowledge about the ricks of climate change to agricultural goods producersзводителей. 3. Mutual co-operaration, and state support in the context of land-use work	There were no negative answers.
Reasons for a positive answer	4. **How certain is the community that new methods of land-use management will reduce the risks of climate change?**	*Reasons for a negative anwer*
1. It will create a mechanism which will reduce the influence of climate change on the livelihood of the population 2. Create an ecological area framework as a basis for ecologically sustainable land use	**3,9** **0 5** 3,8; 4,0; 4,1; 3,8; 3,9; 3,9; 4,0; 3,8; 3,7; 4,1 How could this situation be corrected? 1.Introducing the project measures will create a long lasting basis for ecologically sustainable farmland management 2. Community understanding of the need to continue these measures to fight land degradation after the project's completion.	There were no negative answers.

The results of the VRA are reproduced below:

Vulnerability Reduction Assessment Reporting Form	
Indicator 1	40
Indicator 2	46
Indicator 3	48
Indicator 4	39
VRA Assessment	**43**

4.5. Project Management

4.5.1. Management Structures.

The project will be managed through the organization, planning, leadership and co-ordination of human and material resources for the duration of the project's life cycle, aimed at effectively attaining the project's outcomes and results in terms of work, cost, time and quality.

For effective project management, all measures implemented are structured on the outcomes. The main structure for project participant unity is the project team - a special working group (a project implementation group) - the project will be implemented in this organizational form. The project is being implemented by stakeholders - the rural community of Priozernoye, the Association of Landscape Planning Development (Public Association). The project implementation is considered the main party responsible for achieving all planned project results and consists of the project co-ordinator and technical consultants. The project co-ordinator bears responsibility for project work co-ordination with other partners and reports to the National GEF Small Grant Co-ordination in Kazakhstan.

In the project implementation phase, the project measures will be developed with the involvement of experienced specialists, hydraulic-irrigation engineers, land-use experts, agronomists, agrologists, who have studied real situations, together with representatives of the rural community of Priozernoye:

- Scope and type of project work;
- Project cost, outgoings and expenses;
- Timeframe and duration of project work, stages and phases;
- Resources, needed to implement project measures: labour, financial, technical;

4.5.2. Relation and Responsibilities of Proponent and Project Partners

The project implementation group will carry out all project management functions over all management stages and phases. This includes: planning, control, analysis, decision taking, budgeting, intended expenditure of grants, organizing project measures, monitoring, assessment, reporting, expert appraisal, review and adoption

Association of Landscape Planning Development (Public Association) will bear responsibility for drawing up project specifications and estimates, monitoring the proper use of grants received and implementing the planned measures to the fullest extent, that includes their necessary funding and assumed organizational measures for their implementation. The Association of Landscape Planning Development (Public Association) will work with the community to deliver the necessary project results

The rural community of Ozernoye will be required to provide a technical (a contribution in kind in the form of providing technology for implementing measures, payment for the work of corresponding specialists, providing the necessary reference data e.t.c) and financial contribution for separate project measures.

The Association of Landscape Planning Development (Public Association) will help in consolidating other stakeholders; it will direct consultants in their work and facilitate co-ordination at different project implementation stages, providing integrated community land resource management.

5.0 PROJECT COSTS AND CO-FINANCING

5.1 **Total Project Budget and Requested Amount:**
Total Project Cost: 93 000 USD
Requested Amount: 37 750 долларов США
(Note: Planning grant of 2000$ has been awarded)
Grantee Contribution: 55 250 USD

	Budget Item (Description)	**CBA Contribution, $**		**"Rodina" LTD Contribution, $**		**Total Amount, $**
		2010	2011	Cash	In-kind	
Task 1. Reconstruction of the existing infrastructure in the area						
Output 1.1.	**Reconstruction of the destroyed dams and embankments with ground, stones and plates**				**5000**	**5000**
Activity 1.1.1.	Rent of bulldozer, transportation and laying of the stones and plates 267USD/day*18,73days				5000	5000
Output 1.2.	**Reconstruction of the culverts. Cleaning up or replacement of the culverts' pipes. Purchase of the flow pipes** а) Rent of excavator:46,7 USD/hours *8,57 hour=400 USD б)Rent of bulldozer: 33,34 USD/hour *12hours=400 USD б)Purchase of pipes: 3*1400=4200 USD				**5000**	**5000**
Output 1.3.	**Reconstruction of the existing drainage terraces. Filling up the drainage terraces' outbreaks and setting up the outflow dispersers**				**5000**	**5000**
Activity 1.3.1.	Rent of bulldozer, transportation of stones and plates for restoring the eroded spots of the canal. а) Rent of bulldozer:33,34 USD/hour *90hours=3000 USD б) Truck rent:26,7USD/Hour*74.91 hours=2000 USD				3000 2000	3000 2000
Task 2. Environmental rehabilitation of the area						
Output 2.1.	**Taking out and grassing the low productive tilled fields. Plowing, planting, and attending the permanent grasses. Flattening the ravines and washouts and planting the grasses**	**6407**			**30000**	**36407**
Activity 2.1.1.	Purchase of the permanent grasses seeds, fuel, and grassing а) (machinery, plowing, fuel, dragging, planning) 33,34/ha * 690 ha=23000 USD б) Seeds 833 USD/t*4t=3332 USD	3332			23000	26332
Activity 2.1.2.	Rent of bulldozer Flattening the ravines а) Rent of: 33,3 USD/Hour *302,56 hours=10075 USD	3075			7000	10075
Output 2.2.	**Landscape planning of the area. Grassing of the water conservation zones, regeneration sites bogged up with the hypocrateriform lowlands**	**4257**			**10250**	**14507**
Activity 2.2.1.	Purchase of the permanent grasses seeds б) Seeds 833 USD/t*5,11t=4257USD	4257				4257
Activity 2.2.2.	Machinery rent а) (machinery, plowing, fuel, dragging,				10250	10250

	planning) 33,3/ha * 307,8 ha=10250 USD					
Output 2.3.	**Land use diversification**	**400**				**400**
Activity 2.3.1.	Introduction of the climate adaptive structure of the croplands. Consultations of the Experts on land use diversification. Terms of Reference №1	200				200
Activity 2.3.2.	Recommendations on climate adaptive methods of the soil tratment (sub-surface plowing, paraploughing, snow capture etc). Consultations of the Expert on the land use diversification. Terms of Reference №1	200				200
Task 3. landscape planning of the land use						
Output 3.1.	**Type designs of the croplands by crops cultivation conditions.**	**1000**				**1000**
Activity 3.1.1.	Type designs of the croplands by crops cultivation conditions. a) field study, mapping 33,01m/d* 30,3 USD=1000 (2 Experts in land use will be hired) Terms of Reference №2	1000				1000
Output 3.2.	**Assessment of the water balance of the area**	**500**				**500**
Activity 3.2.1.	Definition of the non-productive losses through evaporation, overseepage, and outflow. a) field study, balance calculation 8,25m/d * 30,3 USD=250USD Land use Expert (1) and Water resources Engineer(1) Terms o Reference №2	250				250
Activity 3.2.2.	Justification of parameters and locations of the hydrologic erosion preventive facilities. a) field study, balance calculation 8,25m/d * 30,3 USD=250USD Land Use Expert (1) and Water resources Engineer (1) Terms of Reference №2	250				250
Output 3.3.	**Optimization of the croplands structure**	**500**				**500**
Activity 3.3.1.	Reduction of the croplands share in the overall balance of the agricultural lands up to 70-75% through taking out low productive rock fill and stony lands (50 ha); sodic soil lands (100 ha); eroded slopes (120 ha); complex relief lands (800 ra); swampy lands (400 ha). a) land use optimization 16,51m/d * 30,3 USD=500 USD Land Use Expert (1) Terms of Reference №2	500				500
Output 3.4	**Croplands planning**	**1000**				**4000**
Activity 3.4.1.	Planning of the sites and crop rotation fields on different types of soil. a) field study, land planning works 24,76 m/d * 30,3 USD=750 USD (2 Land planning Experts will be hired) Terms of Reference №2	750				750
Activity 3.4.2.	Crop rotation planning measures (fields planning, soil protective measures etc) a) field study, crop fields planning 8,25m/d * 30,3 USD=250 USD	250				250

	Land planning Expert (1) Terms of Reference №2					
Output 3.5	**Land Use Plan implementation in the project area and identification of the borderlines**	**5197**				**5197**
Activity 3.5.1.	Implementation of the land use plan on the locality, demarcation, and plowing of the borderlines. a) Preparation of the estimates for implementation of the land use plan in the area 57,15 m/d * 70,0 USD=4000 USD (Terms of Reference 3) Including: Payment to 3 Experts: Types of works: - preparation of the estimates for the implementation of the land use plan; - preparation field works; - reconnaissance survey of the ground triangulation stations; -estimation of the directions (angles) at the triangulation stations; - plotting a traverses; - processing of geodesic data; - installation of the land marks; -Connecting the land marks for plowing the borderlines; Deliver the work to the community members and Project Coordinator. **<u>Car rent:</u>** -Payment to the driver: 10$*21 days=210$; -travel cost (per diem: 21 days*2Minimum Calculation Indexes=300$; -gasoline: 21 days*30liters *0,554$=349$ Travel costs for the Experts involved in the field studies Per diem 3 Experts *21days*2Minimum Calculation Indexes= (21*3*19)=1197$	4000 3141 859 1197				4000 3141 859 1197
Task 4. Strengthening of the community capacity to respond to the potential climate change impacts						
Output 4.1	Improvement of the organizational infrastructure and institutional capacity of the community.		**1903**			**1903**
Activity 4.1.1.	Awareness raising of the community members through training on the potential impacts and risks related to climate change. Promotion of the sustainable land use on the community level, training on selection of the traditional nad alternative methods of land use. Terms of Reference №4 Publication of the information brochure Training workshops in3 villages (3 times *20 people); Rent of overhead projector MM: 50$ per day*1 day *3times=150$; Experts' travel costs: 35$*3times=105$; Per diem: 2 people*2days*2Minimum Calculation Indexes*3times =228$; Payment to trainers: 2 people*100$*3 times		1203			1203

	600$; Coffee break, 20people*2$*3times=120$; Publication of the information brochure (format A5, colored. 8 pages. Russ or Kaz) (Terms of Reference 5)		700			700
Task 5. Distribution of the new land management strategy n the community level.						
Output 5.1.	Demonstration of the project results to other rural communities, local and national governments involved in community based adaptation to climate change impacts (Terms of Reference №4)		**2657**			**2657**
Activity 5.1.1.	Assessment of the implemented practices on adaptation to decreased croplands productivity and moisture supply in climate change conditions. Demonstration of the project results to other rural communities, local and national governmental agencies involved in community based adaptation to climate change impacts. Demonstration workshop (3 times, 20 people) а) to rural community in other district of Akmola region; б) to Akimat of one of the districts of Akmola region; в) to the National Scientific Land Use Center in Astana city. Payment to the Experts: 2Experts*100$*3 times=600$. Rent of the overhead projector MM: 50$ per day* 3 days=150$; Experts' travel: 70$*2times=140$; Per diem: 2people*2days*19$ (2 Minimum Calculation Indexes) *2times=152$; hotel: 2 people* 1day* 47,5$*2times=190$; Coffee break, 20people*2$*5times=200$; Rent of the workshop room: 3 times*76$=228$		1660			1660
Activity 5.1.2.	Monitoring, promotion, and distribution of the new croplands management strategy among farmers and agricultural producers of the North Kazakhstan region at the national and local levels: 2 workshops in one of the regions of the Northern Kazakhstan – one in the district, and another one in the branch enterprise of the National Scientific Land Use Center. \payment to the Experts: 2 people*150$=300$ Rent of the overhead projector MM: 50$ per day *2 days=100$; Experts' travel:80$*2 people=160$; Per diem: 2 people*4days*2Minimum Calculation Indexes (19$)=152$; hotel: *2 people*3days*47,5$=285$;		997			997
Output 5.2.	**Methodological recommendations on soil and water protective planning of the area.**		**2800**			

Activity 5.2.1.	Methodological recommendations on soil and water protective planning of the area Preparation of the methodological recommendations for farmers on land use and planning at the landscape level (Terms of Reference №6)		2800			
	Project management activities: Coordinator (200*18) Accountant (200*18) Social payments (5%)	 **2000** **2000** **200**	 **1600** **1600** **160**			 **3600** **3600** **360**
	Travel costs for the monitoring missions (Terms of Reference №7 и 8) Per diem: 2 Experts*15 days*2Minimum Calculation Indexes (19$)=570$ Payment to Experts: 2 Experts*300$=600$ (Terms of Reference 7 и 8) Transportation: 30 days*25l* *0,554$=416$	**986** **600**				**986** **600**
	Overheads	**200**	**483**			**683**
	Bank fees	**200**	**100**			**300**
	Final Project Evaluation		**1000**			**1000**
	Project Total	**25447**	**12303**	**0**	**55250**	**93000**

CBA Budget

	Items	Man	# of months	Per month	2010	2011	Total
	I. Personnel						
1	Project CoordinatorКоординатор проекта	1	18	200	2000	1600	3600
2	Accountant	1	18	200	2000	1600	3600
3	Social payments				200	160	360
	Sub-Total				**4200**	**3360**	**7560**
	II. Equipment, materials						
1	Seeds of Lucerne				7589		7589
	Sub-total				**7589**		**7589**
	III. Information and awareness						
1	Three trainings in villages					1203	1203
2	Demonstration workshops (5)					2657	2657
3	Publication of the information brochure					700	700
	Sub-total					**4560**	**4560**
	IV. Contracts						
1	Rent of bulldozer				3075		3075
2	Development of the land use plan on the locality: 3 Experts in land management				7000		7000
3	Diversification of the farming: Consultations for farmers				400		400
4	Preparation of the recommendations and proposals					2800	2800
5	Experts on monitoring (2 people)				600		600
	Sub-Total				**11075**	**2800**	**13875**
	V. Travel costs						
1	Travel costs of the Experts				2183		2183
	Sub-total				**2183**	**0**	**2183**
	VI. Other costs						
1	Bank fees				200	100	300
2	Final project evaluation					1000	1000
	Sub-total				**200**	**1100**	**1300**
	VII. Overheads				**200**	**483**	**683**
	TOAL for the project				**25447**	**12303**	**37750**

6. ANNEXES

6.1. Map of the project site location.

6.2 Brief resume of the Project Coordinator, who is responsible for monitoring of the grant funds use.

Project Coordinator, R. Yeserkepov, is a Chairman of the managing body of the Public Association of Landscape Planning". He is fully responsible for grant funds monitoring.

6.3. Co-financing letter.

6.4.Photos of the project area

Ветровая эрозия на паровых полях

Образование оврагов в следствии неправильной организации территории