

**Project proposal of “Zhuldyz” Public Association developed as a part of the Program of Adaptation to Climate Changes at the Community Level (CBA)**

**PROPOSAL SUMMARY**

1. **Project Title:** Dry-Lot Cattle Feeding as the Adaptation Cattle Farming Method to Reduce the Climate Change Risks
2. **Project Site:** Zhangel'dy Village, Otyrar District, South-Kazakhstan Oblast, Republic of Kazakhstan
3. **Proponent:** “Zhuldyz” Public Association located at: Zhangel'dy Village, Otyrar District, South-Kazakhstan Oblast, Kazakhstan; contact person – Sadyk Yesmyrzayev
4. **Project Objective:** To master the new grazing technology resistant to climatic changes - a model grazing farm reducing the pasture degradation risks induced by the climate change
5. **Authorized Representative:** Sadyk Yesmyrzayev
6. **Cooperating Organizations:** “Melio-Service-E” Limited Liability Partnership, “Zhuldyz” Farm of Zhangel'dy Village
7. **Start-Up Date:** June 2009
8. **Project Period:** 24 months
9. **Total Project Cost:** USD 94,863
10. **Amount Requested:** USD 47,960
11. **Local input:**
  - 1) PA “Zhuldyz” - USD 26,863
  - 2) “Melio-Service-E” Limited Liability Partnership - USD 20,000
12. **Brief Project Description:**

In recent years, because of 39% decline in cropping capacity of the cotton plant, which constituted the sustenance basis of Zhangel'dy Village local community (LC), the village residents started to be engaged in cattle breeding and maintain natural economy. As the South-Kazakhstan Oblast, wherein the Project Site (PS) is located, is the most thickly populated region in Kazakhstan, there arises a problem with shortage of grazed lands. The cattle is grazed around the village, which has resulted in strong degradation of pastures within a radius of 1-3 km around the village. The residents grow mainly cotton on their irrigated arable land plots and have a small number of great cattle and small cattle (2-5 cows; 20-50 sheep and goats). As a rule the cattle is non-pedigree and low-productive. To earn income the village residents increase the numbers of head that results in even higher degradation and aridization of pastures. Under conditions of stronger aridization of climate on the PS, leading to precipitation reduction and decline of surface water level and productivity of pastures, both the arable farming and cattle breeding becomes unprofitable. Environmental, social and economic risks increase considerably. The situation has been caused when it is critical to search for and implement new methods of the countryside sustainable development.

The existing method of use of the pasture resources under conditions of increasing climate aridization may not produce positive results. Moreover, it will aggravate further the negative impacts of the climate change, especially on sandy grounds, which are apt to degradation more than other zonal and intrazonal soils. Radically new approach to the pasture resources use is required, which is able to preserve the productive longevity of the pastures and increase productivity thereof.

The climate change will inevitably bring about the pasture deterioration processes. The plant associations will be modified where the more draught-resistant species will replace the less resistant ones. The foliage cover rate will also change to increase the share of bare land without vegetation cover etc. All said factors will result in decrease of nutritive value of forage and thus in the reduction of live weight of the non-pedigree cattle

maintained by the local community of Zhangel'dy Village. The climate change will induce the welfare decline of cattle owners.

The innovation method of pasture use proposed under the Project will be based on the dry-land grazing covering totally 4500 ha. As opposed to the existing (currently used) grazing practices, the dry-land grazing will ensure the cattle load per area unit that may be set and implement under the changed pasture conditions affected by the climate change. The regular monitoring of pasture conditions (soil moisture content, species composition of plants, the yield and quality of biomass) will enable to regulate the animal impact on the pastures by either decreasing or increasing the load rates, the grazing density, cattle penning time, etc. Therefore, extensive and non-systematic grazing will be replaced by a principally new practice involving intensification elements that enable mitigating the risks of climate change impacts.

The Project offers the adaptation approach to reduce the vulnerability of LC members to the risks of climate change by replacing the low-productivity cattle by the area-specific high-productivity breeds - Kazakh White-Head Breed - recommended for the desert zone of the South-Kazakhstan Oblast. The breed consumes the rough-cutter forage and can show the daily growth of 650-700 g/head vs 300-400 g/head as reported for scrub cattle. Therefore, the principally new approach to the use of pastures based on the rotational grazing and replacement of low-productivity cattle by the area-specific breeds is the basis of the rancho cattle farming system resistant to the climate change factors.

The above goal will be attained by solving the project outcomes and obtaining the outputs as described below:

**Objective 1:** To manage pastures in a sustainable form with due account of the climate change risks (*CBA-funded activities directly related to the climate change*).

Outcome 1.1: Pastures have been enclosed to introduce pasture rotation - 4500 ha

Output 1.1.1: Inspection of enclosure and identification of materials required for its restore\$

Output 1.1.2: Repair of enclosure, monitoring of its condition and maintenance during the Project period;

Outcome 1.2: The enclosed pasture infrastructure is restored: watering wells, electricity supply, housing facility for shepherds,

Output 1.2.1: Repair of a well and stock watering;

Output 1.2.2: Repair of and restore of power supply to the pasture area;

Output 1.2.3: Repair of a housing facility for a shepherd.

Outcome 1.3 The environmentally permissible loads have been determined for the enclosed pasture of the project site in line with the climate change projections

Output 1.3.1: Geobotanical study of the enclosed pasture territories and near-aul pastures;

Output 1.3.2: Estimate and issues of the environmentally permissible load on the pasture ecosystems.

Outcome 1.4: A new pasture strategy has been implemented in cooperation with the LC members.

Output 1.4.1: Drafting a scheme of stable rotational grazing on the enclosed pastures.

Output 1.4.2: Training of shepherds to a new rancho strategy of the pasture use.

**Objective 2:** The vulnerability of LC members to the risks of climate change has been reduced by replacing the low-productivity cattle by the area-specific high-productivity breeds (*co-financing*)

Outcome 2.1: Young breeder cattle, Kazakh White-Head Breed, has been purchased

Output 2.1.1: Marketing of the pedigree livestock has been performed; young breeder cattle mostly adapted to local conditions has been selected and purchased

Output 2.1.2: Transportation of the purchased young breeder livestock to the Project Site.

Outcome 2.2: The new adaptation cattle management method has been implemented

Output 2.2.1: Carrying out of prophylactic and quarantine works with the purchased livestock; training of the shepherds to proper livestock management.

Outcome 2.3: Cattle productivity has been raised under the climate change conditions.

Output 2.3.1: Carrying out of check measurements: weight, milk yield, livestock conditions at the beginning of the project and in the course of project implementation.

Output 2.3.2: Carrying out of the comparative analysis of the livestock conditions on the enclosed pastures and on near-aul pastures.

**Objective 3:** The local community ability to take into consideration the climatic risks when managing the pasture resources (*CBA-funded activities directly related to the climate change*).

Outcome 3.1: The rural inhabitants of the project site have been aware of the increasing risks associated with the long-term climate changes.

Output 3.1.1: Holding of meetings and discussions with the LC members. Collection of information about climate change on the Project Site and its impact of the pasture productivity - 2 seminars on VRA.

Output 3.1.2: Printout and distribution of leaflets in Russian and Kazakh with information about climate change risks and project outcomes.

Outcome 3.2: LC members have been trained in the alternative adaptive efficient grazing technology.

Output 3.2.1: LC awareness has been improved through a number of trainings and their potential for implementation of the climatically resistant cattle breeding practice has been strengthened.

Outcome 3.3: A booklet based on the project results has been published.

Output 3.3.1: Collection of information and writing of a booklet.

Output 3.3.2: Publication of a booklet devoted to rancho livestock management in Kazakh (200 copies) and Russian (100 copies).

Output 3.3.3: Strengthening of the technical basis of a local NGO in order to increase awareness of the communities about the climate change risks.

Outcome 3.4: The project experience has been disseminated in the region and can be replicated in other local communities.

Output 3.4.1: Holding of a demonstration seminar.

Outcome 3.5: Online consultations of the specialists during the project implementation.

Outcome 3.6: Monitoring and evaluation of the project results.

Output 3.6.1: Visit of the experts to the Project Site to provide consultations, collect information and evaluate the results.

Outcome 3.7: Drafting of the interim reports and final report on the Project activities.

**Objective 4.** Forming of reserve stocks of forage for the winter and prevernal period (co-financing)

Outcome 4.1: Sowing of lucerne and haymaking over the area of 10 ha.

Output 4.1: Soil preparation and treatment and lucerne sowing

- soil paring
- harrowing
- prevernal harrowing
- seedbed cultivation + harrowing + compaction
- lucerne sowing

Output 4.2: Lucerne irrigation

Output 4.3: Lucerne haymaking

The project activities will result in the development and implementation of the progressive cattle farming practices based on implementation of the enclosed pastured and replacement of low-productivity livestock by regionized breeder cattle resistant to arid climate. This technology enables the sustainable LC development under the growing climate aridity. The rural inhabitants will be less vulnerable to the climate change. Training and demonstration seminar will be held for the residents of Zhangeldy Village and other nearby villages as well as akimat representatives; training literature devoted to efficient use of land and pastures will be distributed and a booklet will be published to disseminate the project experience.

A potential barrier to the project implementation may be the misunderstanding of local authorities and community members. Such barrier may be removed by explanation of the risks related to the climate change, awareness of the project goals, the advantages of rotational grazing and replacement of low-productivity cattle by breeder stock. As the project progresses, one of the ways to raising the interest among the local community will be the proponent's commitment of selling the young breeder cattle (Kazakh White-Head Breed) to the local community at beneficial prices and provide A.I. sire to improve the breed of the livestock belonging to the LC members.

The project agrees with the Strategic Priority on Adaptation (SPA). The project activities will show the ways to reducing the risks of climate change affecting the LC livelihoods and the sustainable livestock development.

The climate change to aridization will increase the environmental risks. The main project thesis is the sustainable LC development by implementing the new water and land management elements mitigating the risks arising from the climate change.

The activities as proposed by the project to implement the system of large enclosed pastures with natural vegetation will reduce the risks of further pasture degradation, raise the livestock productivity based on the raised number of breeder stock and improve the LC resistance to the climate change. The project addresses not only the problem of global environmental benefits; it also provides the new opportunities to LC members of dealing with the traditional cattle farming under the growing climate aridity conditions.

## 1.0. RATIONALE

### 1.1. Community/ecosystem context

Over 80% the territory of Kazakhstan are located in the arid zone. Under the continental climate conditions this determines high vulnerability of pastures to the anthropogenous impact and the climate changes. The natural conditions have historically determined the nomadic and semi-nomadic livelihoods of Kazakhs over the major part of the country. Farming, mostly irrigated farming, was developed in the river valleys.

South-Kazakhstan Oblast, wherein the Project Site (PS) is located, is situated in the southern Kazakhstan, within the boundaries of the eastern part of Turan Lowland and western branches of Tien-Shan mountains. A large proportion of the territory is represented by the plain with hilly-ridgy sands of Kyzylkum and Shardara steppe (south-westward, along the left bank of Syr-Darya River) and Moynkum steppe (northward, along the left bank of Chu River). Climate is strongly continental and arid, with long hot and dry summer and short warm and almost green winter, characterized by often snowbreaks and rains. The average temperature in July in the north and south-west is 26-29°C and 19-25°C in the south-east. The average temperature in January is from -11°C in the north to -2°C in the south. Amount of precipitation in the north - in Betpak-Dala - is about 100 mm a year, and 100-400 mm in the south-west plains with strong fluctuations in different years. In the plains the deserts with sandy and clay sand brown and gray-brown soils prevail over grass and sagebrush and saltwort vegetation with brushwood of black and white saxaul, tamarisk and other bushes. In the bottoms of Syr-Darya and Chu Rivers there are alluvial grassland soils with beds of cane and parcels of flood-plain forest (willow, Asiatic poplar). Pasture ecosystems are represented by the following species: Artemisia, Agropyron, Cochin, Ceratoides, Ceratocarpus, Carex and others.

Soil fertility and abundance of sun light have rise to development of the irrigated farming in this area (cereal crops, cotton plant, rice, cucurbits crops). Inhabitants were also engaged in cattle breeding. In the recent years intensification of soil and vegetation degradation has been observed due to both imperfect methods and water use and land use management and increase of the climate aridization. Sandy soils and polymorphic vegetation make rather fragile ecosystem, which is exposed to degradation when the climate becomes more arid. Pasture ecosystems were adapted to the previously existed amount of annual atmospheric precipitation and its distribution. Decrease in the level (amount) of precipitation and rise of the air temperature have contributed to increase of the soil moisture, which affected first of all the dominant of the vegetation cover and key pasture plant – Artemisia as well as ephemers and ephemeroids. Under conditions of the established amount of precipitation and temperature the potential yield of the ecosystem is 500-600 kg/ha of dry biomass, while dry weather reduces said indicator up to 150-200 kg/ha.

Zhangeldy Village, a typical village of the desert zone, is located in Otyrar District, of the South-Kazakhstan Oblast, on the left bank of Syr-Darya River. The village comprises 150 inhabitants (47 households) and they have 300 cows and 500 sheep. In the Soviet times, the village was specialized in breeding karakul sheep and operated 43 ha of irrigated fields and 8100 ha of pastures. Today the village is in difficult economic conditions. While 10 years ago the crops (mainly cotton) were one of the sources of subsistence of Zhangeldy inhabitants, in the recent years, because of the climate aridization, decrease of the irrigation water and soil salination, the local population has had to change to cattle breeding (great and small cattle). Products of cattle breeding are either sold out or used by the cattle owners for their own needs. To improve their livelihood the village inhabitants try to increase the livestock number in their personal subsidiary economy. A deadlock situation occurs: increase in the livestock number increases the pasture degradation. However, increase in the number of low-productive livestock in the absence of a fodder base does not result in growth of the animal products and the livelihood of the population does not improve.

At the meeting attended by 32 persons representing Zhuldyz Farm, a LLP, 5 farms and 10 households, a spearhead was set up, which comprised of the active and interested residents of the village. It was decided to develop the Project Concept. The participants have discussed the project goals, objectives and activities. All the meeting participants took an active part in writing the Concept Paper. Abuzhakhil Yesmyrzayev was appointed, by common consent, as the main project executive and the manager responsible for the project activities. They have specified in detail the works to restore the enclosed pasture and raise the area-specific cattle breed. In 2009 a spearhead has been registered as “Zhuldyz” Public Association. “Zhuldyz” farm will be the Project’s proponent and provide the enclosed pastures of total area of 4,500 hectares to implement the Project.

The local community members. “Zhuldyz” farm and its leader Abuzhakhil Yesmyrzayev will implement new strategy of pasture management; take part in the monitoring of pastoral crop yield and growth of cattle live weight and will share the experiences gained by the project with the communities of neighboring villages, and will assist the LC members in replacement of the low-productive cattle with the regionized cattle breed.

The preliminary works have been accomplished in Zhangeldy Village, the stakeholders have been found, the village akim’s support has been obtained and the necessary information has been collected. USD 98,800 will be required to implement the Project; the amount requested is equal to USD 49,900. Co-financing of the Project will be provided by the local businessmen: 1 LLP and 5 farms as well as members of Zhangeldy Village local community. 10 households will be the direct participants-beneficiaries of the benefits from the Project implementation.

## **1.2. Climate context**

The main climate parameters of the Project Site are listed below:

- The average lowest temperature in January is -12°
- The average highest temperature in July is +40°
- According to the data provided by the meteorological station of the city of Turkestan, an average annual temperature on the Project Site for the period from 1927 to 2002 increased by 0,8°
- Duration of non-frost period: the shortest period – 116 days and the longest period - 245 days
- Average precipitation factor - 300 mm per year
- According to the long-term observations (from 1900 till 2008) of the meteorological of the city of Turkestan, the amount of precipitation decreases from year to year and equaled to 183 mm in 2008
- Average number of days with less than 30% relative air humidity - 140 days
- Prevailing wind direction during air draughts – northern and northeastern; dry hot winds and dust storms tend to intensify
- The soil cover is represented by light gray soils with low salt content
- Sands cover up to 60% the territory
- Vegetation is represented by ephemeral, poaceous and sagebrush grasses
- The pastures around the village are highly degraded, those around watering sites have the spots of soil erosion
- The average annual precipitation level is less than 300 mm with the seasonal breakdown as follows:
  - 35% in spring (March and April);
  - 50% in winter and autumn (November - February)
  - 15% in summer.

### 1.3 Climate impacts:

- The rise of above-zero temperatures in summer and the drop of below-zero temperatures in winter
- Reduction of snow cover
- Increased aridization and soil moisture evaporation
- The recent trends as observed and reported by the local communities:
  - The drop of annual precipitation
  - Intensified dry hot winds
  - Intensified dust storms.

The reduction of the amount of precipitation (as have been projected and observed during the recent several years by the meteorological service of the city of Turkestan), has resulted in decrease of the soil moisture reserve. In the recent years there have been observed a steady decline in the amount of precipitation in summer and winter time; rise of summer temperatures and decrease of winter temperatures and frequent droughts and dry hot winds, which, in its turn, have causes deterioration of pasture ecosystems and reduction of productivity thereof.

The increasing climate aridity and overgrazing have resulted in the deterioration of quality and productivity of near-village pastures, to withdrawal of the most significant forage crops (e.g. graminaceous plants) from the grass stand. Cattle productivity on such lands is low and in future the livestock production will become unprofitable. Inadequate feeding affects the quantities and quality of the livestock products and, adversely affects the livelihood of the cattle owners. The climate change will intensify the degradation of pastures unless the community changes the pasture management strategy.

The year of 2008 was notable for its intensive draught and is an example of the local community's dependence on the climate conditions; it has clearly demonstrated the full unpreparedness of the local inhabitants to the draught. The yield of the livestock production decreases dramatically because of lack of forage and no opportunity to graze cattle on the near-village pastures. It moves back the local cattle farming to the verge of survival and does not provide any economic benefits.

The estimated climate changes in Kazakhstan may be summarized as follows:

- In average for Kazakhstan territory, under the "median" scenario of the greenhouse gas emission P-50, the expected change of the average annual temperature by 2030 will be: +1.4°C (1.3 ÷ 1.9°C); by 2050: +2.7°C (2.3 ÷ 3.5°C) and by 2085: +4.6°C (3.8 ÷ 5.9 °C).
- There has been also observed the shift of the wetting zone boundaries, with due account of the integrated effect of the projected change in the ground air temperature and amount of precipitation: under different scenarios the wetting zones may shift northward in average by 200-300 km.

### 1.4. Project approach

Due to population explosion in the South-Kazakhstan Oblast (the population density being from 12.9 to 30-40 persons per 1 km<sup>2</sup>) and large-scale development, there has been noted a shortage of available pastures and lack of cattle routes to the remote pastures. Weak material base of many cattle owners makes it inaccessible for them to use remote pastures and maintain their infrastructure.

Because of the lack of pastures the residents move to the cattle management that is grazed around the village all year round and the livestock production is the main source of subsistence for the LC members. In its turn, the condition of farm animals, their productivity and quality of products depend directly on the fodder base. As the pasture forage accounts for at least 70% in the animal diet, change in climate affects not only the ecosystem but the sources of subsistence as well. Well-fattened livestock are sold at USD 600 and more, while poorly-fattened animals are sold at the price not exceeding USD 400. Local cows, if well-fed, may yield 6-7 liters of milk every day, while under existing feeding (underfeeding) the cows yield only 3-4 liters of milk. Thus, the interrelationship: climate - vegetation - animals - animal products - living conditions of the cattle owners can be clearly traced in the territory of Zhangel'dy Village LC. The drought of recent years has adversely affected said interrelationship and had its impacts on the living standards of the countrymen.

The Project activity will include two main components. The adaptation approach to the use of fodders resources of pastures in the desert zone of the South-Kazakhstan Oblast implies change in management of

the pasture resources under conditions of climate aridization intensification, by means of implement the rancho-type cattle grazing. i.e. to use enclosed pastures. It will make possible to reduce loan on the unit of the pasture area due to implementation of the efficient pasture management on the enclosed territory. Another innovative approach to reduction of the LC members' vulnerability to climate change is replacement of the low-productive cattle breed that is widely used in production, by the recommended highly-productive, adaptive to the conditions of increased aridization, regionized cattle breed - Kazakhstan White-Head. High productivity of the regionized breed will allow reducing the livestock number, while preserving the animal production yield. In this case, the animals moved to the rotational grazing, will be maintained on the enclosed pastures for 24 hours during the whole grazing period with due account of rotation of the use plots. These arrangements will maintain the pasture productivity and reduce the risks of climate change.

Climate change forecast	Impact on the LC and ecosystem	Projects outputs against climate change impacts
1. Increase of the drought duration	Decrease of fodder biomass yield on pastures that leads to livestock productivity	Outputs to implement the scheme of rotation of the grazing land on the enclosed pasture; calculation of the rate of stocking per 1 contingent head; pasture watering which will maintain the pasture productivity and their productive longevity and increase the yield of milk, meat and wool.
2. Increase in risk as a result of drop in the amount of annual atmospheric precipitation	Affects growth and development of fodder plants; modification of types of pastures; withdrawal of valuable fodder crops.	Use of the enclosed pasture plots depending on the condition of ephemeral plants and rooted plants; high-priority pasturing of the terrain plots, which are mostly exposed to aridization and most late use of the wetted areas (lowlands, dishes, etc.)
3. Low water status	Concentration of animals around the water sources (wells); pasture degradation; reduction of the ecosystem yield and decrease in the livestock productivity.	Optimization of the pasture water supply through repair of the existing wells will allow dispersing the livestock number at watering sites and preserve productivity of the pasture ecosystems.
4. Decrease of the pasture productivity	Decrease in the animal product yield and worsening of the livelihood of the LC members.	1. Replacement of low-productive stock with highly-productive regionized breed adapted to the arid climate. 2. Conservation of the insurance fodder stocks

The community will benefit from more sustainable agricultural practices by means of efficient use of pastures and preservation of yield of the pasture ecosystems which are dependant on the climate change. Application of the proposed outputs will make it possible to reduce such vulnerability and achieve sustainable management of traditional cattle breeding on the Project Site. Identification of the optimal practices of decrease of impact from the climate change on the sandy pastures will be replicated in the neighboring communities and other sandy massifs of the country, the total area of which in Kazakhstan amounts to 31.2 million hectares. Preliminary discussions with the members of Zhangeldy Village community show their sufficient awareness of the climate change risks. People talk about decrease of the pasture productivity and associate it with a long-term (perennial) drought, absence of rains and rise of temperatures. LC members note the deficit of pastures as the lands and climate on South-Kazakhstan Oblast are extremely favorable for farming.

## 2.0. COMMUNITY OWNERSHIP

### 2.1. Project formulation

The Project general concept has been formulated as a result of discussions with the cattle owners in Zhangeldy Village and agriculture specialists residing there (zootechnicians, veterinarians). At the stages of the Project formulation and planning the LC was involved in discussion of all Project outputs. The Project proponent ensured creation of awareness of the local residents about current climate changes and efforts of the international organizations aimed at reduction of the local countrymen vulnerability to the climate change risks. The Village spearhead discussed the observed climate change and its impact on the well-being of Zhangeldy Village inhabitants. Mutual understanding and cooperation during discussion of the problem and ways of its solution has increased the general interest and been of benefit when addressing the Project general and individual problems of the Project.

## **2.2. Project implementation**

Members of 10 households will take part in the Project on a continuous basis; it is planned to move their cattle to the enclosed pastures (4,500 ha). For this purpose, the LC members participating in the Project activities, are involved in such activity starting from the Project concept discussion till the time of its completion, which ensures transparency of implementation of the Project outputs and evaluation of the activity by the cattle owners per se.

## **2.3. Phase-Out Mechanism, Sustainability**

The works initiated and completed as a part of the Project should be expanded by the LC members due to the results achieved in the course of its implementation. Precise fulfillment of the Project outputs will allow reducing the negative impact of the climate change and ensure sustainability of the Project activity upon its completion. Public, production, social and scientific potential will be accumulated as a result of the Project activity and used by the LC during both the Project activity and upon completion thereof.

## **Proponent description**

### **Organization's background and capacity**

“Zhuldyz” Public Association is a non-profit organization established at the initiative of Zhangeldy Village inhabitants. The organization was registered in February 2009 and has in its disposal the specialists possessing practical work experience in the countryside. Experts of different specialization will be engaged to perform special tasks and projects. The key objective of the PA is to implement such agricultural methods that will help to reduce KC vulnerability to the climate change.

Consulting support to “Zhuldyz” PA during the Project implementation will be provided by the Farmers Foundation of Kazakhstan, a non-profit organization established at the initiative of the Association of Farmers of Kazakhstan. The organization was registered on 15 February 1996.

The Foundation has at its disposal the highly-qualified staff of specialists that have practical work experience and have been trained in the USA, Germany and Israel. To implement specific objectives and projects the Foundation engages specialists of different professions.

For the period of its operations the Foundation has implemented more than 40 projects and programs for support of farms throughout Kazakhstan.

The farmers and country folk are provided with a package of consulting services related to legal, financial, economic, technological and environmental issues. The Foundation holds different seminars including visits to different Oblasts of Kazakhstan.

The Foundation has prepared and published over 30 brochures and booklets with circulation from 300 to 2,000 copies devoted to the issues of day-to-day practical operations in the peasant farms. Brochures are disseminated among the farmers at the seminars, meetings, exhibitions and other mass events.

In 1998 – 2001 the Farmers Foundation of Kazakhstan successfully implemented the demonstration environmental project “Zhanartu” concerning restoration of the biodiversity and aridization control in the bottom of Syr-Darya River (Priaralje Zone). The project was aimed at restoration of natural pasture vegetation on the degraded lands above flood-plain in the South-Kazakhstan Oblast. “Zhanarty” project was awarded with UN-HABITAT Certificate at the International Contest in Dubai “For the Best Experience in 2002 for Environment Improvement”.



## 4.0. PROJECT DESCRIPTION

### 4.1. Objectives, outcome and planned outputs

**Project objective:** To master the new grazing technology resistant to climatic changes - a model grazing farm reducing the pasture degradation risks induced by the climate change

**Objective 1:** Local pastures are managed in a sustainable form with due account of the climate change risks (*CBA-funded activities directly related to the climate change*).

- Outcome 1.1.** Pastures have been enclosed to introduce pasture rotation - 4500 ha  
Output 1.1.1: Inspection of enclosure and identification of materials required for its restore  
Output 1.1.2: Repair of enclosure, monitoring of its condition and maintenance during the Project period
- Outcome 1.2.** The enclosed pasture infrastructure has been created: watering wells, electricity supply, housing facility for shepherds  
Output 1.2.1: Repair of a well and stock watering;  
Output 1.2.2: Repair of and restore of power supply to the pasture area;  
Output 1.2.3: Repair of a housing facility for a shepherd.
- Outcome 1.3.** The environmentally permissible loads have been determined for the enclosed pasture of the project site in line with the climate change projections  
Output 1.3.1: Geobotanical study of the enclosed pasture territories and near-aul pastures  
Output 1.3.2: Estimate and issues of the environmentally permissible load on the pasture ecosystems
- Outcome 1.4.** A new pasture strategy has been implemented in cooperation with the LC members.  
Output 1.4.1: Drafting a scheme of stable rotational grazing on the enclosed pastures.  
Output 1.4.2: Training of shepherds to a new rancho strategy of the pasture use

**Objective 2:** The vulnerability of LC members to the risks of climate change has been reduced by replacing the low-productivity cattle by the area-specific high-productivity breeds (*co-financing*)

- Outcome 2.1.** Young breeder cattle, Kazakh White-Head Breed, has been purchased  
Output 2.1.1: Marketing of the pedigree livestock has been performed; young breeder cattle mostly adapted to local conditions has been selected and purchased  
Output 2.1.2: Transportation of the purchased young breeder livestock to the Project Site.
- Outcome 2.2.** The new adaptation cattle management method has been implemented  
Output 2.2.1: Carrying out of prophylactic and quarantine works with the purchased livestock; training of the shepherds to proper livestock management  
Output 2.2.2: Cattle grazing on the enclosed pasture
- Outcome 2.3.** Cattle productivity has been raised under the climate change conditions.  
Output 2.3.1: Carrying out of check measurements: weight, milk yield, livestock conditions at the beginning of the project and in the course of project implementation.  
Output 2.3.2: Carrying out of the comparative analysis of the livestock conditions on the enclosed pastures and on near-aul pastures.

**Objective 3:** The local community ability to take into consideration the climatic risks when managing the pasture resources has been developed (*CBA-funded activities directly related to the climate change*).

- Outcome 3.1.** The rural inhabitants of the Project Site have been aware of the increasing risks associated with the long-term climate changes.  
Output 3.1.1: Holding of meetings and discussions with the LC members. Collection of information about climate change on the Project Site and its impact of the pasture productivity  
Output 3.1.2: Distribution of information about climate change risks and project

- outcomes
- Outcome 3.2.** LC members have been trained in the alternative adaptive efficient grazing technology.  
Output 3.2.1: Trainings for the LC members
- Outcome 3.3.** A booklet based on the project results has been published.  
Output 3.3.1: Collection of information and writing of a booklet.  
Output 3.3.2: Publication of a booklet devoted to rancho livestock management in Kazakh (200 copies) and Russian (100 copies)
- Outcome 3.4.** The project experience has been disseminated in the region and can be replicated in other local communities.  
Output 3.4.1: Holding of a demonstration seminar
- Outcome 3.5.** Online consultations of the specialists during the project
- Outcome 3.6:** Monitoring and evaluation of the project results.  
 Output 3.6.1: Visit of the experts to the Project Site to provide consultations, collect information and evaluate the results.
- Outcome 3.7:** Preparation of the interim reports and final report on the Project activities.

**Objective 4. Forming of reserve stocks of forage for the winter and prevernal period**

- Outcome 4.1.** Lucerne sowing and haymaking over the area of 10 ha  
Output 4.1: Soil preparation and treatment and lucerne sowing:  
 - soil paring  
 - harrowing  
 - prevernal harrowing  
 - seedbed cultivation + harrowing + compaction  
 - lucerne sowing  
Output 4.2: Lucerne growing  
Output 4.3: Lucerne haymaking

**4.2. Time-table**

	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
<b>Objective 1</b>																								
Output 1.1																								
Output 1.2																								
Output 1.3																								
Output 1.4																								
<b>Objective 2</b>																								
Output 2.1																								
Output 2.2																								
Output 2.3																								
<b>Objective 3</b>																								
Output 3.1																								
Output 3.2																								
Output 3.3																								
Output 3.4																								
Output 3.5																								
Output 3.6																								
Output 3.7																								
<b>Objective 4</b>																								
Output 4.1																								
<b>Outputs</b>												<b>Implementers</b>				<b>Deadline</b>				<b>Indicators</b>				
<b>Objective 1:</b> Local pastures are managed in a sustainable form with due account of the climate change risks																								
Outcome 1.1. Pastures have been enclosed to introduce pasture rotation												S. Esmyrzayev A. Esmyrzayev				June-July 2009				- Enclosure length; - Area of the				

			enclosed pasture
<u>Outcome 1.2:</u> The enclosed pasture infrastructure has been created: watering wells, electricity supply, housing facility for shepherds	A. Esmyrzayev	July-September 2009	- amount of water for cattle watering; - Kvt of electric pover supplied; - housing facility for shepherds
<u>Outcome 1.3:</u> The environmentally permissible loads have been determined for the enclosed pasture of the project site in line with the climate change projections	I.I. Alimayev S. Esmyrzayev	July-September 2009	- loads rates for different types of animals
<u>Outcome 1.4:</u> A new pasture strategy has been implemented in cooperation with the LC members.	I.I. Alimayev A. Esmyrzayev	August 2009 - May 2011	- pasture rotation; scheme; - a number of trainings for shepherds
<b>Objective 2:</b> The vulnerability of LC members to the risks of climate change has been reduced by replacing the low-productivity cattle by the area-specific high-productivity breeds			
<u>Outcome 2.1:</u> Young breeder cattle, Kazakh White-Head Breed, has been purchased and delivered to the Project Site. Necessary veterinary arrangements have been performed	S. Esmyrzayev	June-August 2009 March-April 2010 August-September 2010 March-April 2011	- number of livestock, including: - bull-calves; - heifers. - age; - survival ability
<u>Outcome 2.2:</u> The new adaptation cattle management method has been implemented	A. Esmyrzayev	July 2009 – May 2011	- number of livestock; - % of new breed to the total number of livestock
<u>Outcome 2.3:</u> Cattle productivity has been raised under the climate change conditions.	A. Esmyrzayev	June-October 2009 March-October 2010 March 2011	- weight gain, kg; - milk yield, l
<b>Objective 3:</b> The local community ability to take into consideration the climatic risks when managing the pasture resources has been developed			
<u>Outcome 3.1:</u> The rural inhabitants of the Project Site have been aware of the increasing risks associated with the long-term climate changes.	Environmental expert Grassland expert S. Esmyrzayev	June-September 2009 June-September 2010 April 2011	- a number of information materials; - a number of conversations - a number of seminars on VRA
<u>Outcome 3.2:</u> LC members have been trained in the alternative adaptive efficient grazing technology.	Grassland expert Environmental expert	October 2009	- a number of trainings
<u>Outcome 3.3:</u> A booklet based on the project results has been published.	I.I. Alimayev V.G. Levin	October 2009 April-September 2010 December 2010	- booklet volume; - a number of copies
<u>Outcome 3.4:</u> The project experience has been disseminated in the region and can be replicated in other local communities.	Experts S. Esmyrzayev	May 2011	- a number of seminars; - a number of participants; - a number of auls; - a number of women
<u>Outcome 3.5:</u> Online consultations of the	G.B.Bekturova	In the course of	- a number of

specialists during the project	V.G. Levin I.I. Alimayev	the project	consultations
<u>Outcome 3.6:</u> Monitoring and evaluation of the project results	Experts Members of the consulting committee	June, September 2009; May, October 2010; April 2011	- a number of visits to the PS; - a number of reports
<u>Outcome 3.7:</u> Preparation and submission of the interim reports and final report on the Project activities.	S. Esmyrzayev	November 2009 June 2010 December 2010 May 2011	- a number of reports
<b>Objective 4. Forming of reserve stocks of forage for the winter and prevernal period</b>			
<u>Outcome 4.1:</u> Lucerne sowing and haymaking over the area of 10 ha	A. Esmyrzayev	June-October 2009 March-October 2010 March-May 2011	- cropped area; - germination capacity; - hay amount

### 4.3. Risks and barriers

Barriers and risks	Measures to overcome barriers and mitigate risks
Low awareness of the cattle owners of the local community of the Project activities	The Project will provide continuous demonstration of the Project results and dissemination thereof. Involvement of new members of the LC in the Project activities
Low efficiency of new technology application	1. Training of shepherds to the pasture rotation scheme 2. Regular monitoring of the Project 3. Identification of failures in the Project and correction thereof, when needed
Change of foreign exchange rates	All settlements under the contracts and reports will be denominated in the national currency. Funds will be allocated in tranches

### 4.4. Monitoring and evaluation plan

The Project activities will be assessed at the stage of project planning and in the mid and at the end of the Project activities.

#### Adaptation potential

In the course of the Project implementation, meetings will be held with the LC members participating in the Project activities. These meetings have been planned to be held 3 times (1<sup>st</sup> meeting - at the end of grazing period in 2009; 2<sup>nd</sup> and 3<sup>rd</sup> meetings - in 2010, after the beginning of grazing period and upon its completion). These meetings have been included in the outputs under the Project. Indicator reports will be submitted in the second and last reporting periods.

The indicators of the Project success and reduction of the LC vulnerability to the climate change will include: introduction into the agricultural production of 4,500 hectares of enclosed pastures; implementation of the pasture rotation scheme; creating of a pedigree stock of Kazakh Whit-Head breed; reduction of load on the pastures due to distribution of high-productivity livestock among the LC members; decrease in the number of livestock; increase of the amount and quality of the livestock products and improvement of the material standing of the LC members.

The Project implementation activities will be measured using the following indicators:

- an area of the enclosed pastures. To implement the Project “Zhuldyz” Farm will provide 4,500 hectares of the enclosed pastures;
- condition of the enclosed pastures. The Project outputs stipulate visits of the experts to the Project Site and assessment of the pasture condition;
- condition of the near-aul pastures. Assessment of the near-aul pastures will be performed in parallel with assessment of the enclosed pasture productivity;
- the livestock condition. The livestock conditions will be assessed at the beginning and at the end of the grazing period;

- the livestock production yield. Animals will be weighted and milk and meat yields will be measured on regular basis;
- well-being of the LC members after change of strategy of the land and water management. A comparative analysis of the income earned by the LC members participating in the Project with that of the LC members not involved in the Project will be made at the end of the Project activities.

These indicators will be analyzed against background of the meteorological data provided by the nearest meteorological station.

The Project will be also assessed using the following indicators from the SVA Country Program Strategy:

- A number of implemented methods aimed at reduction of pasture degradation caused by the climate aridization. As a result of the Project activities three methods will be implemented: i) technique of the livestock grazing on the enclosed pasture, ii) technique of improvement of the breed of the LC member livestock; and iii) formation of the reserve forage stocks for the winter and prevernal period.
- A number of the proven approaches for reduction of the LC vulnerability and improvement of their livelihood under conditions of the climate change. The Project will comprise three approaches to the LC vulnerability reduction.
- A number of participants (households) that benefit from the outputs related to sustainable resource management (such increase of income or ensuring of food safety, etc.). Members of 10 households from the LC will benefit from the Project implementation. In the next years the number of beneficiaries will keep growing.

#### **Global environmental benefits**

GEV will be measured by the area of land involved in the sustainable land management as a result of implementation of the Project activities and adaptation methods of the LC sustainable development. Namely, the following GEV indicators will be used:

- Increase in the number of the pedigree livestock as a part of the Project;
- amount of land, in which the sustainable management has been implemented as a part of the Project;
- Increase of the livestock productivity while developing the alternative methods of livestock grazing;
- a number of innovations or new techniques developed/implemented as a part of the Project.

#### **Indicators of global environmental benefits**

##### **Land degradation**

1. A number of hectares of degraded land rehabilitated as a part of the Project. Norms of the cattle load on the sandy pastures within the Project Site will be reduced with due account of the climate change. There will be demonstrated the vegetation coverage expansion due to vegetation reestablishment on the near-aul pastures;
2. a number of hectares of land, on which the sustainable management will be established as a part of the Project. 4,500 ha of land will be sustainably managed as a result of the Project implementation;
3. Total value of goods produced as a part of the Project using the ecosystem resources (in USD). This indicator will be calculated on the annual basis and compared with 2008 background data. It is planned to increase the live weight of the livestock using the pastures under the alternative technology by 10-12% as compared with the current method of pasture utilization;
4. A number of innovations or new techniques developed/implemented as a part of the Project. Under the Project it is planned to implement three innovation methods: the enclosed pasture utilization method; improvement of the breed of the LC livestock and formation of the reserve forage stocks.

#### **Livelihood indicators**

##### **Livelihood**

1. A number of households that benefit from the ПМГ ГЭФ Project. 15 households will have access to the sustainable management of grazing.
2. A number of individuals that benefited from the Project implementation. About 50 people, including the labor veterans and mothers with many children will benefit from the Project implementation.

## Indicators of local abilities strengthening

### Strengthening

1. A number of NGOs/local communities that have taken part in the implementation of ПМГ ГЭФ Project. 1 LLP and 5 peasant farms will take part in the Project.
2. A number of women participated/involved in the Project implementation. 10 women will take part in the Project, which accounts for 15% of the total population of Zhangeldy Village.
3. Total amount of the support in cash and in kind obtained as a part of the Project to implement the new initiatives. "Melio-Service-E" LLP will participate in the Project that will contribute USD 20,000.

### Adaptation indicators

The Project will promote adaptation of the UNDP indicators

1. 15 families (or 22% of population) of the able-bodied population will get access to the sustainable management of grazing.
2. Increase of the live weight of animals using the pastures under the alternative technology will be 10-12% as compared with the current method of the pasture utilization.

#### 4.4.1. Initial VRA analysis

The group of consultants visited Zhangeldy Village on 11may 2009 and held there a seminar with the LC members involved in the Project for adaptation to the climate change. 15 people, including 3 women, took part in the seminar. VRA was performed with regard to the following four questions:

1. How strong is the impact from climate change on your farming activity and livelihood?
2. How strong will be the impact from further increase of temperature and drought development on the methods that the LC currently uses to maintain its livelihood (quality of the livestock, pasture utilization)?
3. What are the factors and to what extent they prevent you from using the agricultural methods that reduce the climate change risks? Assess the barriers that prevent you from using the method which are more resistant to the increase of the climate aridization?
4. Assess, to what extent you will be able to continue the Project outputs after termination of financing?

#### H-form for evaluation of Vulnerability Reduction Assessment (VRA) under "Zhuldyz" Project

<i>Causes of negative response</i>	<b>1. How strong is the impact from climate change on your farming activity and livelihood?</b>  <div style="text-align: right;">3.86</div>	<i>Causes of positive response</i>
<b>1. Forage conservation</b> <b>2. Replacement of farming by other activity: trade</b>	<i>How this assessment may be improved?</i>  <b>1. Digging wells</b>	<b>Precipitation reduction</b> <b>Increase of summer temperatures</b> <b>Dust storms</b> <b>Reduction of the pasture productivity</b> <b>No snow</b> <b>Livestock deasease</b> <b>Increasing of poison grasses</b> <b>Spring frosts</b> <b>Pasture fires</b> <b>Decreasing livestock weight</b> <b>Insects appear on one month earlier</b> <b>Water from Syrdarua river to not come to channels</b>
<i>Causes of negative response</i>	<b>2. How strong will be the impact from further increase of temperature and drought development under current</b>	<i>Causes of positive response</i>

<p>There is a pipe wells</p>	<p><b>methods of the farming on your livelihood?</b></p> <p>0 4.73 5</p> <p><i>How this assessment may be improved?</i></p> <p>To implement pasture rotation scheme on the enclised pastures</p> <p>Reduction of thr cattle load by means of replacement of low-productive cattle with the breed livestock</p> <p>Need udregrading waters</p> <p>To start camel brreding</p> <p>To reconstruct chanel</p>	<p>1. Reduction of the haymaking volumes and increase of its price</p> <p>2. Сокращение площади заливных лугов для заготовки сена</p> <p>3. Ухудшение здоровья животных</p> <p>3. Снижение урожайности пастбищ</p> <p>1. Снизится производство сена</p> <p>2. Снизится травостой</p> <p>3. Уменьшится плодородие пастбищ</p> <p>1. 4. Увеличится заболевание скота</p>
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<p><i>Causes of negative response</i></p> <p>1. Some farmers have both the material base and technical base</p> <p>2. Temporary use of the state remote pastures without permissions</p> <p>3. Utilization by some members of the LC their household plots to general additional income</p>	<p><b>3. What are the factors and to what extent they prevent you from using the agricultural methods that reduce the climate change risks? Assess the barriers that prevent you from using the method which are more resistant to the increase of the climate aridization?</b></p> <p>0 4.6 5</p> <p><i>How this assessment may be improved?</i></p> <p>1. To change livestock by nmore productive</p>	<p><i>Causes of positive response</i></p> <p>No resources</p> <p>No technic</p> <p>Migration of youth people to city</p> <p>No state support</p>
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<p><i>Causes of negative response</i></p> <p>Marketing problems</p> <p>No possibility to take a credit</p>	<p><b>4. Assess, to what extent you will be able to continue the Project outputs after termination of financing?</b></p> <p>4.4</p>	<p><i>Causes of positive response</i></p> <p>Interest of LC in cattle changing</p> <p>We have veterinary doctor</p>
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	How this assessment may be improved? 1.	
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Vulnerability Reduction Assessment Reporting Form	
VRA indicators	Mark
Indicator 1	3,86
Indicator 2	4,73
Indicator 3	4,60
Indicator 4	4,40
<b>VRA Evaluation</b>	<b>4,4</b>

All VRA tables are provided in the Appendix.

#### 4.5. Project management

##### 4.5.1. Management structure

The main project proponent is “Zhuldyz” Public Association, which has at its disposal the qualified specialists: veterinary, zootechnician and agronomist. “Zhuldyz” will engage the experts with regard to the issues of pasture utilization, agroecology and strengthening of potential of countryside NGOs and local communities.

Sadyk Esmurzayev, the Project Manager, has experience in implementation of ecological project. The consulting support to the Project will be provided by Professor Iliya Alimayev, who has vast practical experience in the area of safe and efficient pasture utilization and ecologist Gulnar Bekturova who has been involved in the problem of pasture degradation and sustainable development of local communities for a long time.

##### 4.5.2. Relationship and Responsibilities of Proponent and Project Partners

The local partner of the project is “Melio-Service-E” LLP and its manager – Mr. Sadyk Esmurzayev. S.Esmurzayev is an agronomist and has experience in dealing with the village community and its different groups (women, unemployed, etc.). LLP has an office in the village, telephone, fax and e-mail. A spearhead consisting of the farmers and cattle owners that are interested in the project promotion has been established in the village.

The Project idea is also supported by the local executive power bodies represented by akim.

### 5.0. Project cost and other sources of financing

#### 5.1. Total Project Cost and Amount Requested

		Budget item (description)	Amount from CBA \$	Amount from “Melio-Service-E” LLP, \$		Amount from “Zhuldyz”, \$		Total amount, \$
			In Cash	In Cash	In Kind	In Cash	In Kind	
<b>Objective 1</b> (мероприятия за счет)	Outcome 1.1	Pastures have been enclosed to introduce pasture rotation - 4500 ha	<b>5480,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5480,0</b>
	Output 1.1.1	Inspection of enclosure and identification of	3480 (200,0+)	0	0	0	0	



CBA)		materials required for its repair: barbed wire – 2000 m X 0,83\$; screen – 2m x 300m x 500 tenge; bars – 200 x 5\$; cement – 62 sacks x 1500 tenge	1660 + 2000 + 1000 + 620)					
	Output 1.1.2	Repair of enclosure - 400\$; monitoring of its condition and maintenance - 480\$:	820	0	0	0	0	
	<u>Outcome 1.2</u>	The enclosed pasture infrastructure has been created: watering wells, electricity supply, housing facility for shepherds	<b>7510,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7510,0</b>
	Output 1.2.1	Repairs of wells and watering places - 400\$; blocks 3.9m – 5 items x 6,000 tenge; supports for blocks, 3 supports/1 block – 15 supports x 2,000 tenge; cement – 4 sacks x 1,500 tenge; metal sheet, 28m <sup>2</sup> /1 well x 1,500 tenge; water lift - 2,000\$	2850 (400 + 200 + 200 + 40+10 + 2000)					
	Output 1.2.2	Electric power supply to the pasture: Power generating station plant - 2,400\$	2400					
	Output 1.2.3	Repair of housing facility for shepherds: construction materials - 1,800\$; transportation of materials - 460\$	2260					
	<u>Outcome 1.3</u>	The environmentally permissible loads of great cattle have been determined for the enclosed pasture in line with the climate change projections	<b>600,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>600,0</b>
	Output 1.3.1	Geobotanical study of the enclosed pasture territories and near-aul pastures;	400					
	Output 1.3.2	Estimate and issues of the environmentally permissible load on the pasture ecosystems	200					
	<u>Outcome 1.4</u>	A new pasture management strategy has been implemented jointly with the LC members	<b>600,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>600,0</b>
	Output 1.4.1	Making a scheme of sustainable pasture rotation on the enclosed pastures	300					
	Output 1.4.2	Training of shepherds to a new rancho strategy of pasture management - 2	300					

		trainings						
<b>Total for Objective 1</b>			<b>14190,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14190,0</b>
<b>Objective 2 (co-financing)</b>	<u>Outcome 2.1</u>	Young breeder cattle, Kazakh White-Head Breed, has been purchased	<b>0</b>	<b>10000,0</b>	<b>7200,0</b>	<b>10500,0</b>	<b>500,0</b>	<b>26000,0</b>
	Output 2.1.1	Marketing of the pedigree livestock has been performed; young breeder cattle has been selected and purchased	0	10000	0	10500	0	
	Output 2.1.2	Transportation of the purchased young breeder livestock to the Project Site	0	0	7200	0	500	
	<u>Outcome 2.2</u>	A new adaptation method of great cattle management has been mastered	<b>0</b>	<b>0</b>	<b>0</b>	<b>400,0</b>	<b>1200,0</b>	
	Output 2.2.1	Annual prophylactic works and quarantine works with newly purchased livestock	0	0	0	400	600	
	Output 2.2.2	Training of shepherds to proper young livestock management - 5 field days	0	0	0	0	600	
	<u>Outcome 2.3</u>	Livestock grazing on rancho	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8400,0</b>	
	Output 2.3.1	Meals and wages: shepherds x 150\$ x 24 months; shepherd boy - 50\$ x 24 months	0	0	0	0	14000	
	Output 2.3.2	Carrying out of check measurements: weight, milk yield; livestock condition at the beginning and in the course of the Project	0	0	0	0	1000	
	Output 2.3.3	Comparative analysis of the livestock conditions on rancho and near0aul pastures	0	0	0	0	500	
<b>Total for Objective 2</b>			<b>0</b>	<b>10000,0</b>	<b>7200,0</b>	<b>10900,0</b>	<b>10100,0</b>	<b>36000,0</b>
<b>Objective 3 (мероприятия за счет СВА)</b>	<u>Outcome 3.1</u>	Country folk has been aware of the increased risks of climate change Сельское население	<b>1200,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1200,0</b>
	Output 3.1.1	Holding of meetings and discussions with the LC members. Collection of information about climate change on the Project Site and its impact of the pasture productivity - 3 seminars on VRA.	900	0	0	0	0	
	Output 3.1.2	Output 3.1.2: Printout and distribution of leaflets in Russian and Kazakh with information about	300	0	0	0	0	

		climate change risks and project outcomes						
	<u>Outcome</u> 3.2	The LC members has been taught to the alternative adaptation technology of the rational grazing	<b>400,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>400,0</b>
	Output 3.2.1	LC awareness has been improved through a number of trainings and their potential for implementation of the climatically resistant cattle breeding practice has been strengthened.	400					
	<u>Outcome</u> 3.3	A booklet has been published based on the Project outcomes	<b>1700,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1700,0</b>
	Output 3.3.1	Collection and processing of information and writing of a booklet	300					
	Output 3.3.2	Publication of a booklet devoted to rancho livestock management in Kazakh (200 copies) and Russian (100 copies).	400					
	Output 3.3.3	Strengthening of the technical basis of a local NGO in order to increase awareness of the communities about the climate change risks (computer)	1000,0					
	<u>Outcome</u> 3.4	The Project experience has been distributed in the region and may be replicated in other LCs	<b>1600,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1600,0</b>
	Output 3.4.1	Holding a demonstration seminar	800				0	
	Output 3.4.2	Work with mass media: articles in the newspapers, radio interviews	300					
	Output 3.4.3	Shooting a video film	400					
	<u>Outcome</u> 3.5	Online consultations of the specialists during the Project	<b>500,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>500,0</b>
	<u>Outcome</u> 3.6	Monitoring and evaluation	<b>1500,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1500,0</b>
	<u>Outcome</u> 3.7	Preparation and submission of the interim and final reports– 5	<b>500,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>500,0</b>
<b>Total for Objective 3</b>			<b>7400,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7400,0</b>
<b>Objective 4 (co-financing)</b>	<u>Outcome</u> 4.1	Formation of the reserve forage stocks for the winter and prevernal period	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2263,0</b>	<b>2263,0</b>
	Output	Purchase of Lucerne	0	0	0	0	600	

	4.1.1	seeds 8 kg x 10 ha x 900 tenge						
	Output 4.1.2	Lucerne sowing, growing and haymaking over the area of 10 ha (see a flow diagram)	0	0	0	0	1663,4	
<b>Total for Objective 4</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2263,0</b>	<b>2263,0</b>
		<b>Project administration (CBA-66%, co-financing – 34%)</b> - Project Manager - Local Proponent - Accountant - Coordinator	<b>11520,0</b>	<b>2400,0</b>	<b>0</b>	<b>3600,0</b>	<b>0</b>	<b>17520,0</b>
		<b>Experts (3)</b>	<b>1500,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1500,0</b>
		<b>Consultants trips: 300\$ x 7 times x 2 years</b>	<b>4200,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4200,0</b>
		<b>Meals and accommodation of experts (33.3\$ x 2 persons x 4 days x 7 times x 2 years)</b>	<b>3730,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3730,0</b>
		<b>Visit of the project manager and proponent to the Project Site</b>	<b>1000,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1000,0</b>
		<b>Consumables</b>	<b>1000,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1000,0</b>
		<b>Internet</b>	<b>600,0</b>	<b>400,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1000,0</b>
		<b>PC repair and maintenance</b>	<b>600,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>600,0</b>
		<b>Bank fees</b>	<b>720,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>720,0</b>
		<b>Contingencies</b>	<b>1500,0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1500,0</b>
		<b>TOTAL</b>	<b>47960,0</b>	<b>12800,0</b>	<b>7200,0</b>	<b>14160,0</b>	<b>12703,0</b>	<b>94823,0</b>

#### Breakdown of costs on technological process of feeding crops growing on the area of 100 ha

##### \*) POL breakdown :

- ploughing of 100 ha x 24 l x 85 tenge = 204,000 tenge
- tandem disk harrowing 100 ha x 10l x 85 tenge x 2 times = 170,000 tenge
- **малование** (malovanie- is the agrothechnic that make land more plain 100 ha x 10 l x 85 tenge = 85,000 tenge
- sowing 100 ha x 10 l x 85 tenge = 85,000 tenge
- mowing 100 ha x 10 l x 85 tenge = 85,000 tenge
- raking 100 ha x 10 l x 85 tenge = 85,000 tenge
- compaction 100 ha x 10 l x 85 tenge = 85,000 tenge
- pump irrigation 4 times 15 l/hour x 24 hours x 2 days x 4 times x 85 tenge/l = 244,800 tenge
- avtol 5% of solar oil = 52,190 tenge

**Total 1,095,990 tenge or 9,134 \$**

##### \*\*) Breakdown for equipment rent (tractor MTZ-80, seeding-machine, etc.):

- ploughing 100 ha x 2000 tenge = 200,000 tenge
- tandem disk harrowing 100 ha x 1000 тенге x 2 раза =200 000 тенге
- **малование** 100 ha x 1000 tenge = 100,000 tenge
- sowing 100 ha x 1,000 tenge = 100,000 tenge
- mowing 100 ha x 1,000 tenge = 100,000 tenge
- raking 100 ha x 1,000 tenge = 100,000 tenge
- compaction 100 ha x 1,000 tenge = 100,000 тенге

**Total 900,000 tenge or 7500\$**

