

PROJECT DATA

1. **Project title:** Reducing vulnerability to global climate change of rural communities of Burevestninsky County Naurzum Area of Kostanai region".
2. **Project territory:** Burevestninsky County, Naurzum District, Kostanai region.
3. **Project Applicant:** Burevestnik NGO (created by the initiative group of Burevestnik township citizens, including the heads of farmers households, resource center "Ak Tyrna" staff, machine operators, agronomists). The Action Group was established in connection to the problem associated with the threat of dams destruction and siltations. Dams serve as the sole source of water for populations' household needs. Later, when it was realized that the main source of threat is the traditional technology of wheat cultivation, the initiative group has initiated introduction of new advanced technologies.
4. **Project Objective:** Reduce the vulnerability of rural communities of Burevestninskij County Naurzum Area of Kostanai region attributed to global climate change through awareness raising, knowledge transfer, water supply reliability, production and construction of facilities that demonstrate water conservation technologies and introduction of modern water and soil -saving technologies for cultivation of agricultural products.
5. **Authorized Representative:**
 1. Oleg Torkhov, tel.: 8 (71454) 93604, Mobile.: 87051872102, p.Burevestnik, Naurzum area Kostanayskaya region.
 2. Igor Smbaev, tel.: 8 7145421038, 21828, Karamendy township, Naurzum district, Kostanai region
6. **Partner Organizations:** TOO "Zyto", farm Suhoteplogo AI, farm Torhovoy G., NGO "Eco-Center" Ak Tyrnov "project" Ecosan-Energy-Environment".
7. **Start date:** February 1, 2010.
8. **Project duration:** 17 months
9. **Total project cost:** 402 439 USD
10. **Requested amount:** 48 000 USD
11. **Brief Project Description:** The project is tentatively divided into two parts. The first part is devoted to awareness raisiness among population and contributes to the knowledge transfer with regards to the risk management associated with global climate change (Result 1), as well as to the implementation of measures to improve the reliability of water supply (reinforcement of dykes and improvement of water resource management) (Result 2), and production and construction of facilities that demonstrate water-saving technologies (Result 3). In order to achieve listed results funds of CBA grant and partial co-finance from applicant NGO Burevestnik and NGO "Eco-Center" Ak Tyrnov "(ICF / GEF / UNEP project on the Conservation of Siberian crane) will be used..The second part of the project is devoted to the introduction of modern water and soil - Agrotechnology-saving grain production on two thousand acres of wheat fields Burevestninskogo rural district (Result 4). This part of the project will be fully implemented at the expense of the applicant NGO "Petrel", which will be provided LLP "Zyto".

Two working groups will be set up for the project implementation named "Earth" and "Water" accordingly.

Project administration will be implemented by the project director (Torkhov O.Y.) and the financial manager of the project Suhoteplaya E. (Chief Accountant LLP "Zyto"). An external consultant is assigned to each working group accordingly:

1. "Water" - Parastatov Vladimir (hydrology)

2. "Earth" - Darkhan Abdugarimov, agronomist, scientist (director of the district branch of the 'Republican methodical center of phytosanitary diagnostics' Ministry of Agriculture)

"Water Group" will organize and conduct training seminars aiming at public awareness with regards to the risks of global warming and project progress and results, it will conduct activities aimed at strengthening the levees, elimination of gullies and sowing grass seed on the floodgate of dams, will carry out activities on sustainable water management in the district.

"Earth Group" will conduct training and introduce water and soil saving agricultural technology for wheat production in the area of 2 thousand ha: planting, care and harvesting.

1.0 VALIDATION

1.1 Community / Ecosystem Context

The community consists of people OF BurevestninskY rural district, Naurzum area. This includes the heads of large and small farms, as well as employees, teachers, seasonal workers and their families. The total number of beneficiaries of the project is 1,860 people (see the table below), of which more than one thousand (60%) are salaried employees.

Table. Passport Burevestninskogo rural district.

Territory, ha	732224
Distance to rayon centre, km	94
Total population and at the level of the villages, including:	1860: township Burevestnik-1711, village Akbulak-149
Coltivated area	103000
Number of economic entities	Burevestnic Agro Ltd., Zhito Ltd., NAdezhda-98 Ltd., Atameken-Dos-Ltd., Rassvet Ltd., Sry-Bulak Ltd and others
Number of households	483
Names of borows in the village, village district	township Burevestnik, village Akbulak
Number of social infrastructure objects:	
Number of Schools	2: The school of Burevestnik settlement, Akbulak School
СБА, ФАП, ФП	2: СБА-1, ФП-1
Number of Community Centers	-
School	2
Number of teachers	39
Number of school teachers	211
The presence of livestock (heads)	
Bovine Cattle	1070
Pigs	2130
Horses	140
Sheep, goats	490

The main sources of livelihood are: • Grain production (97%) • Vegetable growing (about 1,5%) • Livestock (cattle, small cattle, contained in the backyard and in teams (in the field mills) (1.5%) • Fish-farming (less than 0,1%)

Previously the county hosted the Soviet Union's largest producer of wheat - State Farm "Burevestnik". This is an area of more than 732 thousand hectares is a watershed for the largest lakes Naurzum Reserve, directly bordering the district.

One of the key characteristics of the area, which has long been called by the inhabitants the "Valley of Death", is the lack of occurrence of fresh water groundwater reserves. All attempts to drill wells for the extraction of groundwater even during pre-perestroika times were unsuccessful. Therefore, drinking water is brought in and poured into containers. The cost of drinking water is noticeably higher than an average value in the cities of Kazakhstan and is

300-500 tenge per one cubic meter. This same water is partially used by people for dish washing and laundry, that is, for household purposes. Most of the economic needs of the village Burevestnik and remote settlements (teams) rely entirely on water from dams, filled with spring floods. Dams were built 35-40 years ago during the development of virgin lands, and now the water bodies formed by dams, are an established ecosystem with its flora and fauna. The welfare of local people depends entirely on these oases.

Despite the fact that dams and reservoirs formed by them are located on farm lands leased by peasant for 49 years, legal responsibility for the condition of dams is not held by anyone. According to the Government Decision of the RK water bodies should be referred to a multi-year lease via special procedure. This procedure involves filing an application for rental of the district administration, tender (competition) between the applicants and the adoption of the results of regional (basin water management). However, neither water users nor the district administration are familiar with this Decree and in Naurzum area there was no precedent for the transfer of lease of artificial water bodies. The same situation can be observed not only in other parts of Kostanai region, but also in other areas.

The dams are of particular importance, as a kind of septic tanks and reservoirs of soil that gets washed by rain and floodwater from the fields, thereby protecting it from silting of the lake Naurzum reserve.

However for a long period of time, these structures were not maintained, so the erosive processes affected the floodgate gradually and led to an unacceptable increase in the ravines and gullies. These processes, which also tend to accelerate, have caused self-destruction of many dams. The remaining dams are also under threat of destruction. This will in its turn undermine the economies of local communities, since dams play an important role for production on corn farms, as well as the roads, and as sources of industrial water for household purposes (watering gardens, fire fighting, etc.). They play a significant role in fish farming which serves as an alternative source of income. Dams are of great importance, serving as roads, especially during the spring thaw. Therefore in some cases the dam is built only as a road, without the intention to save water.

Siltation of dams has led to the fact that they have ceased to perform fully its function of watershed structures, and the population doesn't have enough water resources to grow their own fruit and vegetable products. Citizens of p. Burevestnik have almost completely abandoned the cultivation of vegetables in household gardens. The main danger is the siltation of Naurzum Reserve lakes, which contributes to their more rapid drying, which in turn would destroy the unique pine forests.

Siltation of dams and lakes contributes to soil erosion. Soil erosion is aggravated by, on the one hand, long-term cultivation of large areas of monoculture (wheat), and on the other hand, outdated agricultural technologies, which causes a multiplier effect on the soil caused by the wheels of agricultural machinery and motor vehicles, as well as deep plowing.

1.2 Climate context

The climate of Burevestninsky rural district, as well as of all Naurzum area is continental and characterized by hot and dry summer, which is followed by a cold winter with little snowfall. Contrasts of winter and summer temperatures, as well as day and night are characteristic for the area.

Average January temperature is $-17-18^{\circ}\text{C}$, average temperature for July $+24,4^{\circ}\text{C}$. The absolute maximum temperature reaches $+42^{\circ}\text{C}$, the absolute minimum of -45°C . Spring and fall seasons are no longer than 30 days. Daily average temperature in spring goes above 0°C in early April. In Autumn the 0°C level is reached out in the last decade of October. Summer is hot and dry, winters are harsh and with little snowfall.

District is shallow, there are droughts, dust storms, dry winds in summer and winter snowstorms and blizzards observed. The average annual precipitation in Burevestninsky district based on long-term data constitutes 260 mm. Rainfall is extremely unevenly distributed monthly. For the vegetation season the area is characterized by arid and semi arid periods. Their duration and timing range from year to year. The distribution of precipitation during the seasons, the seasonal course of the summer and winter temperatures cause low relative humidity and a great lack of humidity in the warm season. By the end of May the dry season begins. It lasts until 1st decade of September, some years until the end of December. An average thickness of snow cover is 20 cm. Snow cover maximum height varies from 18 to 36 cm in the open field and 50 - 70 cm in the protected areas. Due to the minimal cover the soil in open places freezes to a depth of 1 - 1,5 meters and in its turn prevents the passage of spring melt water in the deeper layers of soil. As a result, the future harvest depends only on the precipitation received in autumn and summer rainfall.

Aridity of the climate is increased by frequent and strong winds. The predominant winds are south-west and north-west. They are starkly occurred during the passage and aggravation of atmospheric fronts and have the greatest speed. Maximum wind speed reaches 20-24m/s.

In recent years air temperature regime has changed tremendously. The average annual temperature increased by 0.6 ° C. March, July and November became more cold, but the average temperature of December, January, February, April and August has increased. Winters have become warmer by 2-4 ° C, with frequent thaws occurring, and therefore as a result of that the height of snow cover has decreased. In summer and autumn time, the involvement of droughts became more frequent during the summer and fall periods.

1.2 Context of impacts

With underlying aridity and the lack of available ground water for the local population the problem of water conservation for the local community is particularly acute. The main source of irrigation and industrial water are ponds that were formed by filling the earthen dams in the 60-70s of the last century.

A further increase in aridity would cause local community deprivation of the only sources of industrial water and people will not be able to grow vegetables, raise fish and keep livestock. The main source of income - growing wheat, - is threatened under this scenario, since agricultural machinery also needs to use water.

Increasing land degradation also is a cause of reduced water resources due to rapid siltation of pond by soil washed from the fields. As a result of long-term cultivation of monoculture (wheat) in Burevestninsky rural district there is a significant degradation of soil structure, reduction of stocks of humus and nutrients in the arable layer. Decrease of humus in relation to long-term plowing on the investigated soils has been observed at 34% of the initial state in dark chestnut soils .

Changes have occurred in the composition of organic matter of these soils. The fractions of "active" young humus have decreased almost by half.

Increased frequency of dry periods progressively will lead to a loss of economic attractiveness of grain cultivation in the target area of the project, and as a consequence, first to abject poverty, and then to forced migration, since grain production is the main and practically the only source of livelihood.

The grain yields and, consequently, the incomes of farmers are increasingly affected by erosive processes affecting the fields. Population has limited awareness of the methods to combat these processes and as well as of modern technologies to reduce crop weather dependence conditions (for instance, moldboardless technology) or water-saving (such as drip irrigation, dry toilets) and others.

In the context of global climate change turning into the direction of warming, degradation of arable land could have a domino effect and spread to new lands, pastures and grasslands of rural districts.

Erosive processes in the fields will also lead to the complete silting and drying up of Naurzum Reserve lakes, an important bird area. The migratory routes of hundreds of thousands of birds from Europe and western Siberia lie along through it. Thus, it is expected to accelerate the disappearance of globally threatened species of birds. The importance of these lakes for the conservation of global biodiversity confirmed by their acceptance under the protection of UNESCO.

The fact that the destruction of dams located on the fields of rural districts during the spring floods in the Lake reserves Naurzum get thousands of tons of soil flooding them and clogging rivers and Karasu Ulken Karasaga adds to the problem. Masses of soil deposited along the banks, lead to the disappearance of scrub (willow, wild rose bushes, etc.), growing along the rivers. As the final result, there is a gradual destruction of the water balance of Naurzum reserve lakes network. As a result, arrays of dunno-hummocky eolian sands, that separate the system of lakes Sary-Moin, Zharkol and Aksuat system will be at the mercy of the southern dry winds and irreversible processes caused by wind erosion will start. The greatest impact of climate change will have on small peasant farms and community members who are employed at corn producing farms. Together with their families they represent 90% of population of the target districts. Small farms usually do not have their own farm equipment and therefore are not able to follow the timing of planting and proper agricultural technology. The cost of grain they produce is higher. Annually certain amount of small farmers is forced to leave their fields not cleared away due to the fact that the costs exceed the possible profit.

The wages of employees directly dependent on the yield and therefore minimal in dry years.

Climate change impacts pose a special threat to the biocoenosis of Naurzum Reserve, which went down in 2008 in the list of world cultural heritage protected by UNESCO. Draining of the reserve lakes will not only lead to the disappearance of waterbirds, but also will cause the destruction of the most unique southern pine forests – pine

burrs. CO₂ and other gases emissions during the operation of the engines of agricultural machinery contribute to the global warming. New technologies can significantly save fuel and reduce these emissions. While cultivating 2000 ha with application of new technology savings will constitute 33%, consequently fuel consumption will drop by one third.

1.4 . Project approach

Climate Change Scenario	Community and Ecosystem Impact	Project Activities Aimed at Preventing Climate Change Impacts
1. Extending the period of drought	Decrease in corn harvests – major livelihood of local community Increase in the scope of land degradation	Education of farmers Implementation of mold technology
2. Decrease in annual precipitation	Reduced supplies of water for technical needs, watering vegetables and water for animals, loss of fish farming as an alternative source of income. Death steppe oases formed around the ponds as a result of dry vegetation, loss of fauna (fish) as a result of dry and freezing water. Pose a significant threat of more frequent wildfires, which already cover a territory hundreds of thousands of hectares in the region	Training for the users of the dams Awareness raising among population Strengthening of levees and culverts. Elimination of ravines and gullies, sowing grass floodgate and planting of trees and shrubs. A round table with participation of water users, administration and management structures of water resources at district and provincial level. Design a multi-year lease drainage structures. Introduction of water saving technologies: drip irrigation. Strengthening and clearing of dams in order to increase water supplies for the fire fighting activities.

Describe the threats to ecosystems once more / global environmental benefit in the baseline framework

Reservoirs in the residence of the local community play a role of a lagoon and the storage of soil that is washed by rain and floodwater from the fields, thereby protecting it from silting of the Naurzum Reserve lake, which contribute to more rapid drying, which in its turn would cause loss of the unique pine forests.

Over the decades, these waters have turned the surrounding areas in the steppe oases with rich flora and fauna.

In connection with climate change more and more frequent droughts contribute to more frequent drying up of lakes protected area, and less accumulation of water in the dams of the target districts. At present, the latest are threatened due to the erosion cause by floodwater. With their disappearance changes in local microclimate in the direction of desiccation and strengthen of dry winds should be expected.

In this regard, efficient use of water resources by local people for household needs, as well as excessive water withdrawals and threatened flora and fauna of the ponds is of a great importance.

Despite the fact that these ponds are artificial constructions, they are virtually indistinguishable from the natural, but require some special care to keep them in top working condition. Over many years of economic restructuring gullies on the floodgate emerged and rill occurred as well as other degradation processes. Suspension of these processes will not only help to save the steppe oases, but also will lead to increase in the area of forest and grass plantings.

Re-enter the additional threat of climate change ecosystems / global environmental benefit

Additional threats to ecosystems are posed by the degradation of agricultural lands as a result of the prevailing traditional extensive farming and backward agricultural technology. Growing erosive processes in the fields lead to rapid siltation of ponds in the target area and Naurzum Reserve, lakes causing droughts and loss of ecological community of the reserve, which is one of the key ornitological areas on the migration routes of birds from Western Siberia and Europe.

Describe how the project will eliminate the base pressure on ecosystems / global environmental benefit through co-financing (which should include an equal share of the Financing Program - 1:1)

Base pressures on ecosystems will be eliminated through the introduction of the target constituency of the new soil and water saving technologies, which will ensure minimal impact on the soil and, consequently, will reduce land degradation processes. An obvious example of the benefits of this technology will lead to its wide dissemination on the farms of the District. In its turn, obtaining higher yields would allow greater use of other environmentally conscious approaches to improve sustainability: crop rotation, global environmental benefit Reducing erosion processes to the natural level, where the loss of humus is replenished at the same extent, will significantly slow down the processes of lakes siltation. An important result of the introduction of new technology is reduction of CO2 emissions caused by the operation of agricultural machinery and vehicles.

Describe how the project will provide the flexibility of ecosystems / global environmental benefit in relation to climate change, including increasing climate variability

Elimination of ravines and gullies, grass sowing of the floodgate and trees and shrubs planting will help to reduce water erosion. Improved water management, clearing and strengthening of dams, water saving technologies will contribute to the conservation of flora and fauna of the steppe oasis. The conditions for maintaining the microclimate at the local level will be secured as a result.

Describe how the project will provide benefits to the community

Benefits to the community will be provided as follows:

1. Increased community awareness about the risks of climate change
2. 75 people, including at least 25 women, trained in seminars.
3. Two thousand of hectares planted with wheat, serve as a clear example of new water-and soil-conservation technologies application. Community members involved in the cultivation of new technology, obtained the theoretical knowledge and practical skills.
4. Strengthening of levees guarantees their integrity during floods and store water for technical needs, but also preserves greenery on the banks of reservoirs.
5. Community members are prepared for long dry periods
6. The population is aware of and is actively seeking alternative sources of income, including those derived, for example, from fish farming.
7. Community members know how to save water resources, in particular, they are aware of the technology of drip irrigation, and apply them in practice.
8. Two hectares of vegetable plantations will be grown using water saving technologies such as drip irrigation.

At least 80 people will be involved in the direct implementation of the project . Of these women are represented by at least 30 people. At least 30 people (30% of the total number) are representatives of the **LLP** and the heads of farms and heads of their departments will be trained in workshops. At least 75 people will participate at the seminars. Of those, at least 25 women. Awareness raising program, including one at the the local school will affect directly at least 600 people.

Describe how the project will ensure capacity for improvement, replication, and/or political influence

Potential replication of project activities will be enhanced through training of community members during the workshops, where they will acquire knowledge with regards to modern ecological agricultural technologies, and proper use of earthen drainage facilities, construction of dry latrines, the use of alternative energy. Legalization of the dam status will become a precedent not only in Naurzum area, but also in Kostanay and other northern areas of Kazakhstan, and pave the way to solve this problem for other users of artificial drainage facilities. In particular, four dams has to be legalized in the targeted district and that will provide interest and responsibility of large farms, on whose territory they are located.

Describe the barriers associated with low potential, low awareness, and specify measures to eliminate those barriers.

The main obstacle associated with low capacity and low level of awareness is primarily a lack of knowledge and public pessimistic attitude to the potential improvement of livelihood opportunities, including the possibilities of

new technologies planned for application during the project period. This obstacle will be eliminated through training, visual demos and regularly awareness raising activities among the public about the progress and achievements of the project at the planning sessions of local administration, assemblies and meetings of the district residents. Information group will be issuing quarterly newsletter providing information on the project progress and activities. Newsletter will be distributed among school teachers, county and district and among the heads of farmers households. Articles reflecting the progress of the project and its achievements will be published quarterly in the local newspaper .

2.0 COMMUNITY RIGHT TO THE PROJECT

2.1 Defining the project

The project idea first emerged during the course of the project aimed at preservation of the Siberian crane. The consultants of this projects have originally raised the question of the elimination of artificial drainage structures, in particular in the Burevestninsky rural district. This issue was central to the meetings of the Management Committee of the project site within the project on preservation of the Siberian Crane. However, the case study showed that a significant portion of drainage facilities have been self-destroyed as a result of improper operation (in particular no measures taken to eliminate gullies on water drawdowns), lack of funds to manage them. One of the reasons, and it is not the least one, was that no one has no legal liability with regards towards state of these buildings . Only a few separated dams, which are used as roads for the passage of vehicles and as collections of water for technical needs of field crews farms, remained.

Preservation of these remaining dams gained significance for the local community, because for most of the county on the horizon there is no available groundwater (all attempts to find drinking water in the USSR failed) and no natural water bodies (therefore people labeled this area "the valley of death"). Farmers have demonstrated the processes of soil erosion in the fields to the experts and have persuaded them that the drainage facilities in fact detained for only a small part of the flood waters rushed to the protected lakes, but at the same time in case of proper operation of dams they act as sumps, limiting siltation of lakes. Hydrologists also have the same opinion.

Thus, the problem of soil erosion became central. The magnitude of it are disastrous to the agricultural lands of the district. Annually only as a result of repeated exposure to agricultural machinery and vehicles tens of thousands tons of destroyed soil fall into the lake reserve, causing their silting. It is clear that the elimination of the few remaining dams will not solve the problem of flooding of the reserve lakes, if measures to reduce land degradation as a result of agricultural activities are not taken. The only way to solve this problem is to introduce modern agricultural technologies for the production of grain. More frequent loss of crops during teh dry years made local farmers to come to this conclusion. However, the introduction of new technologies is hampered by the lack of illustrative examples and lack of knowledge.

Project applicanat is an NGO created by community members, including heads of farmer households and their employees. That is, the actual perpetrators of the project.

2.2 Project implementation

The main implementors of the project are members of the target community, but two consultants. The project will be attended by members and employees of partners in the project: LTD "Zyto", farms Suhoteplogo AV Torhovoy G. Executives and specialists of the county, the director of resource center "Ak Tyrnov", head of the NGO "Eco-Center ", head of resource centre "Ak Tyrnov" and others.wll participate in the activities on awareness raising and knowledge dissemination.

The project is divided into two parts. The first part (reducing baseline climate risk) is devoted to awareness raising and education of the population with regards to risk management of global climate change (Result 1), the implementation of measures to improve the reliability of water supply (reinforcement of dykes and improving water resource management) (Result 2), production and construction of sites, demonstrating water saving technologies (Result 3). In particular, the technology of drip irrigation on two farms (LLP "Zyto" and BCH Tretyak and twenty outbuildings of Burevestnik township with a total area of not less than 2 ha will be introduced. T-Tape TSX manufactured in the USA or, more preferred alternative, the production of a new factory in Turkestan South Kazakhstan region will be used for irrigation .

In order to achieve these results funds of CBA grant and partial co-financing by the NGO "Byrevestnik" (applicant), NGO "Eco-Center" Ak Tyrna "and Mountain Club "Zhabagly-Manas" (project "eco-sanitation-Energy-Environment" , the program «Empowerment and Local Action», WECF (Women in Europe for a Common Future, funded by the Government of the Kingdom of the Netherlands) will be used . Co-financing budget is presented in the project budget.

The second part of the project (for adaptation) is devoted to the introduction of modern water and soil saving agrotechnology of grain production on two thousand acres of wheat fields of Burevestninsky rural district (Result 4). This part of the project will be fully implemented at the expense of the applicant NGO "Byrevestnik", which will be provided by LLP "Zyto".

For the project will set up two working groups with conventional names: "Earth" and "Water". Project administration will implement the project director (Torkhov OY) and the financial manager of the project Suhoteplaya E. (Chief Accountant LLP "corn").

For each working group is fixed by an external consultant:
 1. "Water" - Parastatov Vladimir (Hydrology) (Chairman Naurzum District Society of Hunters and Fishermen)
 2. "Earth" - Darkhan Abdukarimov, agronomist, scientist (director of the district branch of the Republican methodical center phytosanitary diagnostics and forecasts in agricultural MA RK)
 With "Water" will organize and conduct training seminars and public awareness about the risks of global warming and the progress and results of the project, will undertake work to strengthen the levees, the elimination of gullies and sowing grass seed on the floodgate of dams, will carry out the procedure to legitimize the dam, will carry out activities introduction of water saving technologies (drip irrigation).

To demonstrate water conservation techniques on private land, twenty families will be selected on a competitive basis. Particular attention will be given to households whose head is a woman. The main criteria for selection will be the willingness and the ability to make its own contribution to the project in the form of water storage, additional pipelines, planting materials and labor force. Selection will be carried out with the obligatory participation of the independent expert. Competition and selection will be completed by the beginning of the planting season.

"Earth" will provide work training and implementation of water and soil --saving agricultural technology for growing wheat in the area of 2 thousand ha: planting, care and harvesting.

Two working groups will be set up for the project implementation named "Earth" and "Water" accordingly.

Project administration will be implemented by the project director (Torkhov O.Y.) and the financial manager of the project Suhoteplaya E. (Chief Accountant LLP "Zyto"). An external consultant is assigned to each working group accordingly:

1. "Water" - Parastatov Vladimir Georgievich (hydrologist) (Chairperson of Nazrum Society of Hunters and Fishermen)
2. "Earth" - Darkhan Abdukarimov, agronomist, scientist (director of the district branch of the 'Republican methodical center of phytosanitary diagnostics' Ministry of agriculture)

"Water Group" will organize and conduct training seminars aiming at public awareness with regards t the risks of global warming and project progress and results, it will conduct activities aimed at strengthening the levees, elimination of gullies and sowing grass seed on the floodgate of dams, will carry out activities on sustainable water management in the district.

In order to demonstrate water conservation techniques on a private land, twenty families will be selected on a competitive basis. Particular attention will be given to households whose head is a woman. The main criteria for selection will be the willingness and the ability to make its own contribution to the project in the form of water storage, additional pipelines, planting materials and labor force. Selection will be carried out with the obligatory participation of the independent expert. Competition and selection will be completed by the beginning of the planting season.

"Earth Group" will conduct training and introduce water and soil saving agricultural technology for wheat production in the area of 2 thousand ha: planting, care and harvesting.

2.3 Mechanism of phasing out, project sustainability

Project activities aimed at implementation of the new technology will be continue by the main partners of the applicant (LLP "Zyto"), peasant farms Suhoteply AV and G. Torhovoy at own expense. The key to this is to purchase a set John Deere manufactured in the USA at the expense of LLP "Zyto" .Significant cost savings - up to 30% of the

funds – can be achieved at the expense of fuel and labor cost as well as due to the lessons learned. It will allow to sow at least 2000 hectares of positive results from the introduction of new technologies steadily each year and will become an example for other farms, which will explore opportunities for technology transition. For this purpose state program of financial support for new technologies will be applied. As well as the possibility of leasing for the purchase of new farm equipment, allowing to introduce new technologies. It will also draw on the capacities of the existing farm equipment. NGO which mission is related to the development of new technologies will also assist farmers in this process.

Activities aimed at strengthening the levees were held by the local community before, but now they will continue at a higher level continuing with the elimination of gullies, sowing floodgate, etc. This will be facilitated through training conducted by highly qualified specialists. Resolution of the problem of property (rental) drainage structures will ensure the responsibility of owners (tenants) for the state of dams in the post-project period, and force them to seek means to strengthen the levees.

The succession of other activities: the introduction of drip irrigation will be achieved by visual demos and training members of the community.

Since water scarcity is the main reason that prevents people of Burevestnik township abandon the cultivation of vegetable production on private plots, the solution to this problem is application of drip irrigation and will allow the villagers not only to provide themselves with vegetables, but also to grow them for sale.

Environmental sustainability of the project will be ensured through an annual reduction of CO₂ emissions, reduction of humus losses and the land degradation caused by the mechanical effects of agricultural machinery and loss of moisture, strengthening of culverts by seeding grasses and shrubs. As a result, the project will increase sustainability of ground water catchment facilities, ensure the existence of steppe oasis.

Financial sustainability will be ensured at the expense of additional revenue over the season, resulting from implementation of mold technology (saves fuel, labor, reduces the units of used farm equipment) and gains derived from the increase in average yield of 10%. By conservative estimates, the profit will be: due to saved fuel - 25 tons x 60 tg / kg = 1.5 million tenge, due to higher yields - 2000ga X 40kgH30 tg / kg = 2.4 million tenge. Total estimates are 3, 9 million tenge. The distribution of benefits from this activity will be carried out based on the decision of owners invested in the implementation of this part of the project.

Partly the profits will cover the costs attached to the installation and the strengthening of dykes, partly to maintain the infrastructure of the settlement, to assist the school and municipal improvement of the village. Partly the profit will be used for financial support to the NGOs - the applicant, as necessary means for its operation.

Income received from the villagers grow vegetables using drip irrigation on an area of 2 hectares, will be received by those stakeholders who are directly involved in production. By conservative estimates, the profit will be at least 1 million tenge. Payback period is 3 years.

Villagers (20 households), and farmer households will sign an agreement stating that all equipment for drip irrigation will be transferred for temporary free use provided that it will be used annually for the project. In case of breach of this condition equipment based on the decision of the NGO will be transferred to another person under the same conditions. In case of loss, bringing it into disrepair, users will have a duty to bring it into working condition.

Social sustainability will be determined primarily by the fact that residents of Burevestnik township will gain knowledge and confidence in the fact that there is a real opportunity to address the problem of lack of water and the cultivation of vegetables, which can not only help to provide for their family, but also can be put on the market.

3.0 APPLICANT DATA

3.1 Brief information about the applicant and its potential

NGO "Burevestnik" serves an applicant. NGO name is symbolic for the project: Messenger of storms. Initiative group "Burevestnik" was formed during the summer 2008 in the context of problems associated with the the conservation of remaining dams in the district and their legitimization. This same group was the first in the district that took the initiative to introduce water and soil-saving agricultural technology. The group leader Oleg Torkhov (Project Director) (CV attached) is known as one of the most successful and ambitious entrepreneurs in the area. LLP "Zyto" led by him is among the largest producers of commodity grain. Scientist and agronomist Evgeny Muratov (team leader "Land") (CV attached), was trained to operate John Deere set in 2008 is part of the group. In total, LLP "Zyto" has 6 trained mechanics able to operate the set.

The same group at the expense of LLP "Zyto" carried out in 2007 drainage and complete cleaning of one of the dams, which had never been cleaned since the Soviet Union. Igor Smbaev (team leader "Knowledge") is part of the group, he is a specialist vet, who has two years of experience in the international project "Ak Tyrna" as the Director of resource center "Ak Tyrna (CV attached) and two years of experience in the "Eco-sanitation - Energy-Ecology" project, first as a coordinator of Naurzum project site, then as Director of the Resource Center.

Head of "Eco-sanitation and Energy" Suhoteply Alexander (CV attached) has two decades of experience in agriculture, is the head of the peasant economy. Has completed training seminar on environmental sanitation and energy in Kyrgyzstan in Osh in the frame of the program «Empowerment and local action».

Scientist and agronomist, Darkhan Abdikarimov (resume attached) (group "Earth"), director of the district branch of the Republican and methodical center for Phytosanitary Diagnostics and Forecasts "in AIC MA RK, hydrologist Vladimir Parastatov (resume attached) (Group Water ") are involved as external consultants to the project.

4.0 PROJECT DESCRIPTION

4.1 Goal, results, outcomes

Project goal: Reduce the vulnerability to climate change impacts of the community of Burevestninskij County, Naurzum Area, Kostanai region	
Result 1.0: Local community awareness regarding risks attributed to climate change is raised	
	Outcome 1.1: <i>A group of farm owners in the number of 15 farmers is educated to manage risks associated with global climate change;</i> <i>Activity 1.1.1 A seminar for 15 farm owners is held;</i>
	Outcome 1.2: <i>A group of teachers in a number of 15 is educated to manage risks associated with global climate change;</i> <i>Activity 1.2.1 A seminar on risk management with regards to the issues of global climate change for 15 teachers of local school is held;</i>
	Outcome 1.3 <i>Local community is informed about the impacts of global climate change and project progress on a regular basis;</i> <i>Activity 1.3.1. The newsletter on the progress of the project and information on the effects of global climate change edition 99 copies is produced quarterly during the project;</i> <i>Activity 1.3.2. Project representative informs participants of the monthly planning session at the county and quarterly planning session at the district administration about the progress and achievements of the project;</i> <i>Activity 1.3.3. Quarterly in the local newspaper and once in six months in the regional newspaper, information on the progress and achievements of the project is published</i> <i>Activity 1.3.4. At least three times during the project there will be held a general meeting of members of the community involved in the project: in the beginning, before the interim report and prior to the end of the project.</i>
	Outcome 1.4: OCY <i>conducted by the local community;</i> <i>Activity 1.4.1 The interim assessment to reduce vulnerability;</i> <i>Activity 1.4.2 Final assessment to reduce vulnerability.</i>
Result 2.0: Two dams strengthened and legitimized	
	Outcome 2.1: <i>A group of users in a number of 15 is trained to apply water collecting technology for ground constructions;</i> <i>Activity 2.1.1. A seminar for 15 heads and members of farmers households on technology application of water collecting technology for ground constructions.</i>
	Outcome 2.2: <i>A round table on the issue of legalization of artificial water collecting installations is held.</i> <i>Activity 2.2.1. A round table with representatives of rayon and oblast administration as well as water conservation authorities is held;</i> <i>Activity 2.2.2. Recommendations produced as an outcome of the round table is presented to the Government of Republic of Kazakhstan.</i>
	Outcome 2.3: <i>Activities on identification and elimination of gullies on the floodgate dams are held;</i> <i>Activity 2.3.1 Investigation of culverts conditions and the surrounding areas around the dams district;</i> <i>Activity 2.3.2 Develop recommendations on elimination of ravines and gullies;</i> <i>Activity 2.3.3 Discussion and approval of operational plan on elimination of ravines and gullies;</i>

	<i>Activity 2.3.4. Elimination of ravines and gullies.</i>
	<p>Outcome 2.4 <i>Activities on floodgate sowing seeds of wild grasses (seed collection -1, tillage-2, seed-3) are held;</i></p> <p><i>Activity 2.4.1. Collection of the wild grasses seeds (bluegrass and the other on the recommendations of a consultant);</i></p> <p><i>Activity 2.4.2. Survey of floodgates and territories around the dams to specify locations for planting the seeds of wild grasses;</i></p> <p><i>Activity 2.4.3. Preparing the soil for sowing seeds of wild grasses;</i></p> <p><i>Activity 2.4.4. Sowing the seeds of wild grasses on the slopes of ravines and floodgates.</i></p>
	<p>Outcome 2.5: <i>Activities on clearing ponds and building dams are carried out;</i></p> <p><i>Activity 2.5.1. A survey of dams and development of an operational plan for the clearing and strengthening of dams are carried out;</i></p> <p><i>Activity 2.5.2. Изготовление бетонированного водопропуска под дорогой на участке №1 Constructing concrete culvert under the road on the section #1</i></p> <p><i>Activity 2.5.3. Clearing of the pond №1</i></p> <p><i>Activity 2.5.4. Pond #1 dam stabilization</i></p> <p><i>Activity 2.5.5. Clearing of the pond №2</i></p> <p><i>Activity 2.5.6. Pond #2 dam stabilization</i></p> <p><i>Activity 2.5.7 Carrying out activities on reconstruction of culverts of dams # 3,4 adn 5 on the territory of Burevestnik township.</i></p>
	<p>Outcome 2.6: <i>Framed multi-year lease at least for two drainage structures (dams)</i></p> <p><i>Activity 2.6.1. Prepared and submitted tender documents for multi-year lease of dam #1</i></p> <p><i>Activity 2.6.2. Prepared and submitted tender documents for multi-year lease of dam #2</i></p> <p><i>Activity 2.6.3. Multi-year lease for the dam #1 is legalized</i></p> <p><i>Activity 2.6.4. Multi-year lease for the dam #2 is legalized</i></p>
Result 3.0: Constructed and manufactured objects that demonstrate water-saving technologies	
	<p>Outcome 3.1: <i>Two groups of local citizens (15 people each) are trained in application of water saving technologies;</i></p> <p><i>Activity 3.1. A seminar on water saving technologies for 15 heads and employees of farms;</i></p> <p><i>Activity 3.1.2 A seminar on water saving technologies for 15 heads and employees of farms.</i></p>
	<p>Outcome 3.2: <i>Внедрена технология капельного орошения для выращивания овощей в ТОО «Жуто» и к/х Третьяка Technology of drip irrigation fro vegetables production is introduced at LLP «Zyto» and kolhoz enterprize Tretiak is introduced</i></p> <p><i>Activity 3.2.1. Two represenattives of LLP «Zyto» and kolhoz enterprize Tretiaka are sent for the training to one of the enterprises of South-Kazakhstan region for training in drip irrigation technology;</i></p> <p><i>Activity 3.2.2 A firm is contracted to supply equipment for drip irrigation;</i></p> <p><i>Activity 3.2.3 Drip irrigation equipment is purchased;</i></p> <p><i>Activity 3.2.4 Soil is prepared and equipment is installed for teh drip irrigation on vegetable palntations of two enterprises;</i></p> <p><i>Activity 3.2.5 The vegetable plantations have sowed with drip irrigation in two farms and twenty farmsteads</i></p>
Результат 4.0: New water and soil saving technology is introduced	
	<p>Outcome 4.1: <i>A group of 15 machine operators and foremen is trained with regards to specifics of new technology</i></p> <p><i>Activity 4.1.1 A seminar for 15 machine operators and foremen no less than of 10 households of teh district on application of new technology</i></p>
	<p>Outcome 4.2: <i>Sown, grown and harvested 2,000 hectares of wheat on the land trust district on mold technology (process map attached);</i></p> <p><i>Activity 4.2.1 Retention of snow;</i></p> <p><i>Activity 4.2.2 Presowing preparation (seedbed activities);</i></p> <p><i>Activity 4.2.3 Sowing+cultivation+harrowing+rolling;</i></p> <p><i>Activity 4.2.4 Herbicides applied to crops.</i></p> <p><i>Activity 4.2.5 Harvesting (direct harvesting) with chopped straw.</i></p>

4.2 Plan of activities

Year	2010												2011					
Month	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	
Result 1.0																		
Outcome 1.1.																		
Activity 1.1.																		
Outcome 1.2.																		
Activity 1.2.1																		
Outcome 1.3.																		
Activity1.3.1																		
Activity1.3.2.																		
Activity 1.3.3																		
Activity1.3.4																		
Outcome 1.4.																		
Activity 1.4.1																		
Activity 1.4.2																		
Result 2.0																		
Outcome 2.1.																		
Activity 2.1.1.																		
Outcome 2.2.																		
Activity 2.2.1																		
Activity 2.2.2																		
Outcome 2.3.																		
Activity 2.3.1																		
Activity 2.3.2																		
Activity 2.3.3																		
Activity 2.3.4																		
Outcome 2.4.																		
Activity 2.4.1																		
Activity 2.4.2																		
Activity 2.4.3																		
Activity 2.4.4																		
Outcome 2.5.																		
Activity 2.5.1																		
Activity 2.5.2																		
Activity 2.5.3																		
Activity 2.5.4																		
Activity 2.5.5																		
Activity 2.5.6																		
Activity 2.5.7																		
Outcome 2.6.																		

4.3 Risks and barriers

Barriers and risks	Measures to overcome barriers and reduce the risks
<p>The main barrier is the depressing attitude and lack of awareness among a large part of the local community caused by the decline of the economy and living standards</p> <p>Low capacity in the application of modern agricultural technologies and water conservation.</p>	<p>This barrier will be overcome in the project through the implementation of intense training programs and awareness raising activities, aiming to demonstrate new technologies and opportunities offered by attracting funds from several sources.</p> <p>A number of planned seminars, involvement of other stakeholders in the project target area, are designed to overcome the barriers associated with low potential.</p>
<p>The next barrier is the absence of precedent to legitimize the use of artificial catchment facilities in the area Naurzum, as well as lack of relevant experience among experts of the district administration, imperfect laws, in particular, the Government Decision number 119 dated 30 January 2004 does not include water features, and responsibility for man-made drainage facilities on the territories, bought or received long-term lease</p>	<p>This barrier will be overcome, in particular, by holding a round table with invited representatives of the Tobol-Turgai basin management, the Department of Water Resources and Administration of Naurzum district that are responsible for the management of water resources. At the same round table issues related to the lack of project documentation for drainage structures (missing files in, the absence of which the problem may arise with long-term lease of these facilities) will be addressed. It will also provide recommendations on amendments to the Resolution of the Government.</p>
<p>One of the main risks is the success of new technology, provided that project participants do not have their own experience.</p>	<p>This risk is reduced to some extent by the fact that under the terms of manufacturer seeding complex John Deere is insured only if its operated by certified machine operators, trained in a special program. Machine operators of LLP "Zyto" completed the course.</p>
<p>In the case of extreme drought, the results of the application of new technology may also be not noticed or be destroyed by fire.</p>	<p>Relatively large area of 2000 ha, divided into separate fields, ensures that the harvest will continue and will demonstrate the effectiveness of new technology.</p>
<p>Effect of a possible sharp fall in the exchange rate against the U.S. dollar.</p>	<p>Possible loss will be refunded by LLP "Zyto" at their own expense, as deeply interested in achieving the objectives of the project. Good economic situation, a strong manufacturing base of LLP "Zyto" is a guarantee for achieving the goals of the project.</p>
<p>Irresponsible treatment of the equipment for drip irrigation by the villagers.</p>	<p>Selection of farm enterprises will be carried out on a competitive basis. Every household and heads of farmsteads will be entered into a notarized contract, providing for responsibility for the proper use of drip irrigation systems for five years and restoration of them in case of damage. Given the great interest of women in operating their small farms, the advantage will be given to families where the head is a woman.</p>

4. Monitoring and Evaluation Plan:

Assessment (The Vulnerability Reduction Assessment (VRA)) was carried out at the planning stage of the project, and will be held in the middle and at the end of the project.

4.4.1 Baseline VRA study

Initial analysis of the PRA was conducted in preparation of project proposals by interviewing representatives of the local community. The survey was conducted in three groups with a total number of 46 participants, of which the number of women was 16, which constitutes 35%. Group composition details are presented in the table. Focus groups

can be designated as "Teachers and students", "mechanics and peasants", "Administrative staff" based on their composition.

The following questions were discussed:

1. How much does the drought impact the sources of your livelihood?
2. How effective are the measures of your community to reduce the impact of drought?
3. How serious would the consequences of four years of drought be?
4. Will your community be able to address the four-year drought issues without a significant reduction in livelihoods?
5. How difficult is it to overcome barriers to the use of water saving technologies and technologies that enhance the stability of soils to water and wind erosion?
6. Will the community continue carrying on activities on the introduction of water and soil saving technologies?
7. Does your own community seek other ways to improve the livelihood except the ones covered by the project?

Below are the results of assessment to reduce risks of climate change (VRA):

Reporting Form on Reduced Vulnerability	
Vulnerability Risk Indicator	Score
Indicator 1	1,4
Indicator 2	2,2
Indicator 3	1,4
Indicator 4	1,2
Indicator 5	3,9
Indicator 6	5,7
Indicator 7	4,0
Result	2,8

H-FORM OF BASELINE VULNERABILITY RISK ASSESMENT (VRA) FOR THE PROJECT

Reasons for a negative score	Questions	Reasons for a positive score																				
1. Reservoirs are evaporated 2. Pastures burn down 3. Major source of income – grain production and live stock 4. There is no rotation of cultures 5. Frequent winds 6. Disturbance of the dams 7. There is no state support 8. There are no plots, since there is no water 9. Pastures degradation 10. Not enough livestock Deceased harvest	1. How much does the drought affect your sources of income? 1,4	1. Some dams are managed 2. Snow retention is applied																				
	Very much Does not affect at all																					
	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>		1	2	3	4	5	6	7	8	9	10										
	1		2	3	4	5	6	7	8	9	10											
	How to increase the scores?																					
	How to minimize the effects of drought?																					
1. Introduce new agricultural technologies 2. Create insurance fund (money, forage, fodder) 3. Increase amount of water in the dams 4. Maintain dams properly 5. Seek for another sources of income																						

1. Everyone is by themselves 2. Everything is expensive 3. High interest rate on the loans 4. Lack of knowledge 5. Lack of information 6. Small farms 7. Fragmentation	2. How effective are the measures of your community to reduce the impact of drought? 2,2										1. Some dams are preserved
	Very much					Does not affect at all					
	1	2	3	4	5	6	7	8	9	10	
	How to increase the scores?										
	How to increase the effectiveness of measures?										
	1. Cooperate 2. Learn										

1. Agricultural activities will collapse 2. Farms will become bankrupt 3. Full unemployment 4. Loss of livestock 5. Reservoirs will dry out 6. Strong winds will cause erosion 7. It will take long to restore 8. No water 9. New technologies are expensive 10. Lack of knowledge 11. No state support 12. Dams are silted and therefore there is little water	3. How serious would the consequences of four years of drought be? 1,4										1. Farms fortify their dams 2. There is hope for the water in dams and low water consuming technologies
	Very					Does not affect at all					
	1	2	3	4	5	6	7	8	9	10	
	How to increase the scores?										
	How to increase the effectiveness of measures?										
	1. Clean and fortify the dams 2. Improve knowledge 3. Awareness raising 4. Look for another source of income										

1. No other sources of income 2. Outdated technologies 3. No knowledge 4. Everyone will leave 5. No state support 6. No sources of water 7. No plots (no watering) 8. High interest rates on loans 9. There is no finance for	4. Will your community be able to address the four-year drought issues without a significant reduction in livelihoods? 1,2										1. You can clean up and deepen the dams together
	Very much					Does not affect at all					
	1	2	3	4	5	6	7	8	9	10	
	How to increase the scores?										

the restoration of the dam in Burevestik township	<ol style="list-style-type: none"> 1. Leave 2. Look for other sources of income 3. Study 4. Look for ground water sources 5. Restore pastures 6. Cooperate 7. Apply new knowledge 	
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<ol style="list-style-type: none"> 1. Very expensive 2. No understanding 3. No knowledge 4. Chemicals are dangerous 5. Outdated machinery 6. Fragmentation of households 7. No real support from the state 8. Very few believe 9. Officials are not very interested 10. Limited knowledge, lack of experts 	5. How difficult is it to overcome barriers to the use of water saving technologies and technologies that enhance the stability of soils to water and wind erosion? 3,9		<ol style="list-style-type: none"> 1. Chemical technologies can significantly reduce the impact 2. Significantly increased count. to farming, using new technologies 3. Uniting of small farming 								
	Very much			Does not affect at all							
	1	2		3	4	5	6	7	8	9	10
	How to increase the scores?										
	How to overcome barriers?										
	<ol style="list-style-type: none"> 1. Learn 2. Create reserves 3. Cooperate 4. Purchase new machinery 										

<ol style="list-style-type: none"> 1. Lack of experts 2. Lack of knowledge 3. Useless since the processes are irreversible 4. No finance 	6. Will the community continue carrying on activities on the introduction of water and soil saving technologies? 5,7		<ol style="list-style-type: none"> 1. No alternative 2. Everyone is interested in it 3. No possibility to leave 4. No other sources of income 5. Farming is the main source of income 6. Community lives on cultivation of wheat exclusively 7. We do not know anything else 								
	Very much			Does not affect at all							
	1	2		3	4	5	6	7	8	9	10
	How to increase the scores?										
	How to minimize the impacts of drought?										
	<ol style="list-style-type: none"> 1. Educate people 2. Attract experts 										

<ol style="list-style-type: none"> 1. Population is passive 2. No knowledge 3. No experience 4. No resources 5. No possibilities 6. No support from the state 7. Lack of entrepreneurial people 	7. Will your own community seek other ways to improve the livelihood except the ones covered by the project? 4,8		<ol style="list-style-type: none"> 1. There are entrepreneurial people 2. Youth 3. Are forced to, since there is no place to go 4. It is difficult everywhere 5. There is no other land 						
	Очень сильно			Не влияет совсем					
	1	2		3	4	5	6	7	8

	How to increase the scores?										
	How to motivate population?										
	1. Education 2. Awareness raising 3. experience exchange 4. Upgrade skills 5. New types of production 6. Use possibilities of otehr programmes										

H-form for Vulnerability Risk Assesment (VRA) based on four questions

Reasons for teh negative evaluation	Questions	Reasons for the positive evaluation
1. Reservoirs are evaporated 2. Pastures burn down 3. Major source of income – grain production and live stock 4. There is no roattin of cultures 5. Frequent winds 6. Dambs destroy 7. There is no state support 8. There are no plots, since tehre is no water 9. Pastures degradation 10. Not enough livestock Deceased harvest	1(1). To waht extent foes draught affect your livelihood? 1	1. Some dams are maintained 2. Snow retention is applied
	Very much Does not affetc at all	
	1 2 3 4 5	
	How to increase the scores?	
	In other words, how to reduce draught impacts?	
	1. Employ new agrotechnologies 2. Establish insurancy fund (fianncial, fodder, feeding-stuffs) 3. To increase amount of water in teh dams 4. To maitain dams properly 5. Look for other sources of income	

1. Agricultural activities will collapse 2. Farms will become bankrupt 3. Full unemployment 4. Loss of livestock 5. Reservoirs will dry out 6. Strong winds will cause erosion 7. It will take long to restore 8. No water 9. New technologies are expensive 10. Lack of knowledge 11. No state support 12. Dams are silted and therefore there is little water	2(3). How crucial the impacts of four year draught will be? 1	1. Farms fortify their dams 2. There is hope for the water in dams and low water consuming technologies
	Very much Does not impact at all	
	1 2 3 4 5	
	How to increase the scores?	
	In other words, how to reduce long-term draught impacts??	
	1. Clean and fortify teh dams 2. Improve knowledge 3. Awareness raisiness 4. Look for another source of income	

1. Very expensive 2. No understanding 3. No knowledge 4. Chemicals are dangerous 5. Outdated machinery 6. Fragmentation of households 7. No real support from teh satte 8. Very few believe 9. Officials are not very interested 10. Limited knowledg, lack of experts	3 (5). How difficult is it to overcome barriers to the use of water saving technologies and technologies that enhance the stability of soils to water and wind erosion? ?					1. Chemical technologies can significantly reduce the impact 2. Significantly increased count. to farming, using new technologies 3. Uniting of small farming
	2					
	Does not impact at all		Does not impact at all			
	1	2	3	4	5	
	How to increase the scores?					
	In other words, how to overcoem teh barriers?					
	1. Learn 2. Create reserves 3. Cooperate 4. Purchase new machinery					

1. Lack of experts 2. Lack of knowledge 3. Useless since the processes are irreversible 4. No finance	4 (6). Will the community continue carrying on activities on the introduction of water and soil saving technologies?					1. No alternative 2. Everyone is interested in it 3. No possibility to leave 4. No other sources of income 5. Farming is the main source of income 6. Community lives on cultivatin of wheat exclusivly 7. We do not know anything else
	2,8					
	Does not impact at all		Does not impact at all			
	1	2	3	4	5	
	How to increase the scores?					
	What is teh potential of project replication and spreading?					
	1. Educate people 2. Attract experts					

Vulnerability Assesment Reporting Form

Indicator for Vulnerability Evaluation	Score
Indicator 1	1
Indicator 2	1
Indicator 3	2
Indicator 4	2,8
Result	1,7

Vulnerability assesment will be held at the **intermediate stage** of the project at the end of the warm period in late fall period when all activities of the warm season will be fulfilled. This will allow to assess the results and adjust plans for the winter period in order to use its fpotential for possible additional measures to educate and train population.

An interim analysis will be conducted among the same groups as the initial (not less than 80%). All members data are in place for this purpose.

Final Vulnerability assesment will be held at before the reporting month. By this time, all the key project activities will be implemented. The groups composition will, if possible, also be tried to kept close to initial (not less than 80% of the original). No less than 35 per cent participation of women, as at the initial stage, will be ensured not.

Global environmental benefits (GeV)

Indicators of global environmental benefits

- **Land degradation**

1. Number of degraded land rehabilitated under the project, ha - 2,
2. Number of land on which the project established sustainable management (cooperation with 20 court sites and two peasant farms), ha-2.
3. The area, where sustainable management of water and land resources was implemented, ha -2000;
4. The total value of goods produced in the frame of the project while using the resources of ecosystems (in U.S. dollars). This indicator will be calculated annually and compared with the background data in 2008.
5. Number of developed / implemented innovations or new technologies in the project farmework (drip irrigation) - 1.
6. Number of local regulations and documents with regards to sensitive aspects of land degradation to which the project has made a contribution (two acts of responsibility for catchment facilities) - 2.

Sustainable livelihood

1. Number of households receiving benefits from the project GEF SGP - 20.
2. Number of persons receiving benefits from the project GEF SGP-80.

- **Empowerment**

- 1. Number of NGOs / local communities involved in the GEF SGP project. 3 NGOs, 1 LLP and 3 farms will participate inn the implementation of the project.
- 2. The number of women participating / involved in the project - 30.

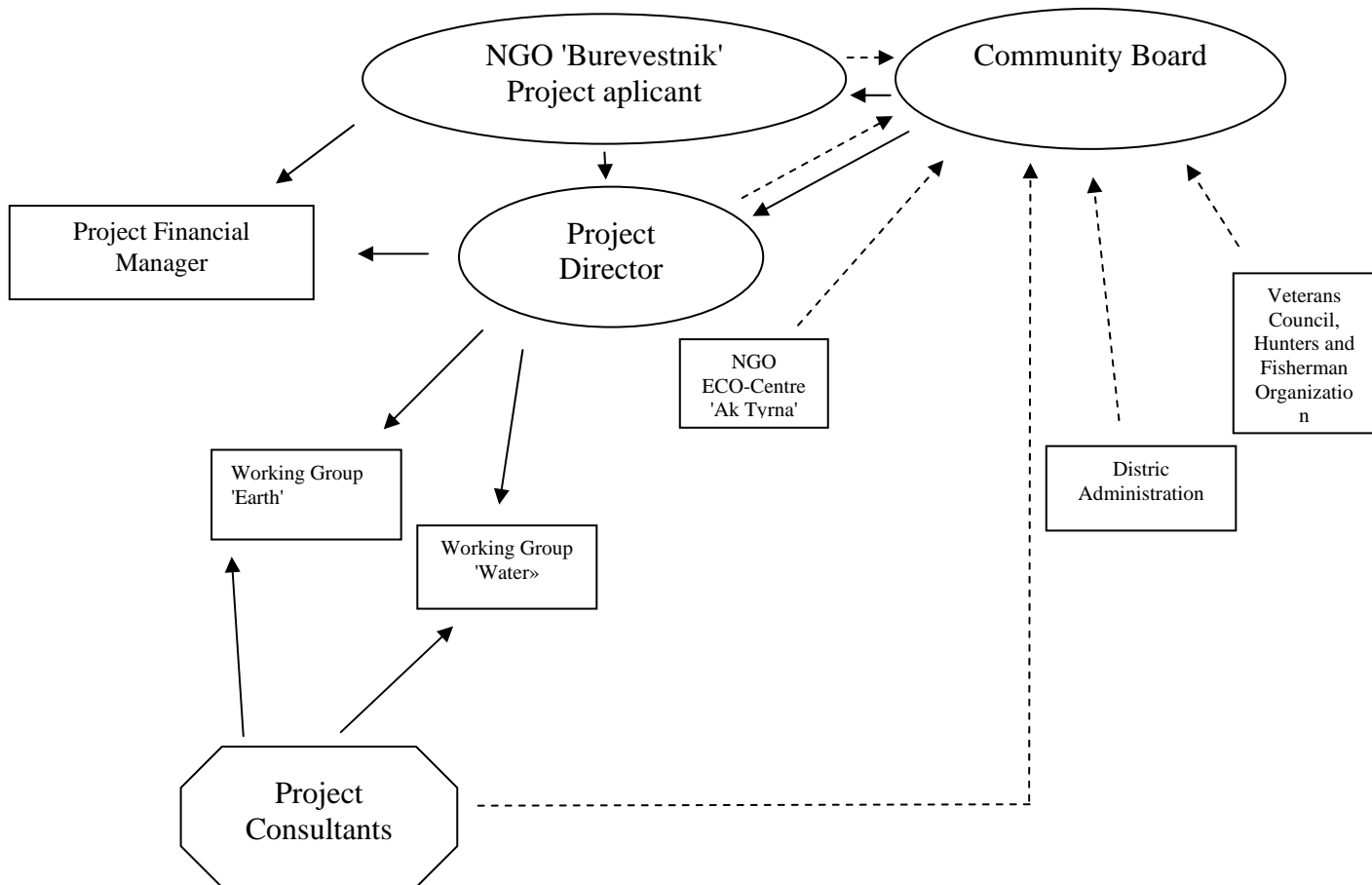
ADAPTATION UNDP INDICATORS:

The project will be evaluated using the following indicators of the country program strategy CBA

- The number of embedded techniques aimed at reducing the risks posed by climate change and included as part of activities for sustainable management of natural resources-**1**;
- The number of proven approaches for sustainable management of natural resources to improve local livelihoods and resources conservation -**3**;
- Area, on which sustainable management of water and land resources was applied, ha -2000;
- Number of participants (families) to benefit from activities on sustainable resource management (such as increased income or food security, etc.), families -- **20**.

4.5 **Project management**
4.5.1 Management Structures

Fig. 1. Project management structure



The presented figure (Fig. 1) reflects the overall project management structure, where the four working groups, each headed by a team leader, are directly reporting to the Director of the project. The consultancy team consists of specialists, each of which provides its working group. Financial Project Manager keeps a relative independence, which is defined by the project budget.

The Community Board includes representatives from local government and all partner organizations, as well as local public entities: the Veterans Council and the Society of Hunters and Fishermen and is responsible for review and approval of project reports, including financing. The number of women involved in the project management will be not less than 30%.

4.5.2 The relationship and responsibilities of the applicant and project partners

Relations between the applicant and partners are based on the voluntarily assumed obligations based on the goals and objectives of each of them determined by the charter, TORs and project activities. The obligations of each partner due to their role in the present draft will be confirmed by written assurances and commitments as at the stage of the project proposal within the first month after the start of the project and will necessarily be secured through special agreements providing for liability of the parties. Grant Agreement between the donor and the applicant of this project proposal will be designated through these instruments as they are a key part and are of the same legal force as the Treaties themselves.

Operational daily issues will be discussed and approved by the Public Council on monitoring of project activities by a simple participants majority. The minimum number of participants for the legitimacy of decisions should not be less than 75% of the total number of members of the Public Council (PC). PC has to gather compulsorily three times during the project (after the start of the project for review and approval of an interim report and to approve the

final report). In between of the Council meetings Secretary of the Board elected at a general meeting of the council by the majority, will be responsible for arranging meetings Council and control of its decisions.

