The GEF Small Grants Programme
UNDP Uzbekistan

Newsletter
#1
01.11.2010

LANDENERGYBIODIVERSITY

Dear friends!

We would like to present for your kind attention the first issue of the newsletter from the Global Environmental Facility's Small Grants Programme (GEF SGP) in Uzbekistan.

Spreading information about best practices and suitable technologies that can help people of Uzbekistan sustainably use their natural resources and improve their livelihoods is an important part of our work.

We hope that the present newsletter may well become the first step for many of us to discover that each of us can do something small, but nevertheless very important to preserve the Nature for our future generations.

In this regard, we have no doubt that the newsletter, which will be reflecting important milestones of our work, will be well perceived by our readers.

Anita Nirody
(UNDP Resident Representative in Uzbekistan)

At present, the GEF SGP is the largest programme globally providing small grants for environment protection. It has been already 2 years since the Programme started its work in Uzbekistan.

We have by now achieved good results in promotion of the clean energy for the needs of people, preserving unique biodiversity of the country and rehabilitating soils and its functions. In this newsletter, we would like to present some examples of our work.

Alexey Volkov
(GEF SGP National Coordinator in Uzbekistan)

Go fishing!!!

“Let’s go fishing, son!” – Perhaps any father would love to say and any son would love to hear these words. But, unfortunately, it is very likely that this endeavour of yours may well be spoilt. Because of a simple reason — there is almost no big fish left in rivers and lakes of Uzbekistan. Certainly, the process itself is important, but still one would wish to catch a fish and make fish soup on a river bank.

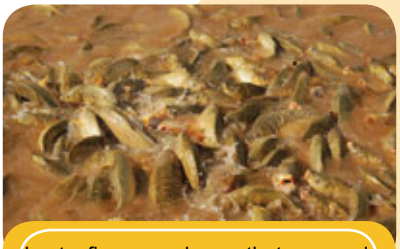
There are several reasons for the problem. The major reason is that our rivers are highly regulated. Vast hydrologic constructions have disrupted ecology of fish species populations. Fish do not have normal conditions for movement, spawning and reproduction.

Another key problem for severe reduction of the fish stock in our country is illegal fishing. Population of the country is constantly increasing. Everyone wants to have a fish on a table. When there is a permanent demand, someone will find a way to satisfy it. In the absence of effective regulation, many “entrepreneurs” try to fill the niche by totally exhausting the fish stock of the country. This kind of large-scale fish extraction ignores any considerations of the fish population recovery, severely damages rivers’ and lakes’ ecosystems and leads to extinction of many fish species.

Construction of the aquaculture complex
(Photo by Alexey Volkov)

Fish stocks are disappearing, demand is growing and fish becomes more expensive to extract and to buy on a market. Are there any solutions to the problem?

Project title:
Development of intensive aquaculture as an approach to reduce pressure on fish populations of the Aral See watershed.
Applicant:
Institute of Zoology, Academy of Science in Uzbekistan
Responsible team leader:
Dr. Bakhtiyor Karimov
Tel: + 998 71 240 07 18
Grant from the GEF SGP:
50 000 USD
Co-financing from other sources:
50 261 USD



Last figures show that annual fish consumption in Uzbekistan is still around 0,5 kg per capita. For comparison the average fish consumption in the world is 16,6 kg per capita

Our approach is to hit the illegal fishing by economical instruments. If only entrepreneurs in the fish business would be equipped with a technology of breeding fish that would be much more attractive (from the monetary and practicality point of view) than the fish extraction from the rivers and lakes, businessmen would switch to it. Then, the demand for fish could be met by artificial fish production and fish populations in the lakes and rivers would be left alone for recreational fishermen and tourists.

The technology being tested in the framework of our project has already found wide application in Europe. The technology implies fish farming/breeding in a plant with a closed water circulation system.

This kind of plant can be built on any farm. It does not require a big land plot and what is more important for Uzbekistan – it does not require much water. The technology features re-use of water that is purified by special filters as well as permanent temperature regime and balanced feeding. Sustaining these conditions allows to increase the speed of fish biomass uptake by many times in comparison with fish breeding in ponds or fishing in natural reservoirs.

For comparison, today fishing from natural reservoirs brings 0,5-6 kg of fish per 1 hectare, fish cultivation in ponds reaches productivity of 900-1600 kg per hectare. The best systems of closed fish farming are

able to reach the output of 200-400 kg from 1 m³. But they are quite expensive. At the same time, our researchers indicate that it is quite possible to create a relatively simple, not expensive, practical plant with minimum set of equipment using the same principles that could be used for a wide range of fresh water fish species. The price would make this system attractive for our farmers.

This was the rationale for the project development. The GEF SGP project aims to create a plant with the capacity of minimum 20 kg/m³. Even with this minimal output, the amount of fish produced by this plant is 10 times more cost effective than production in ponds and requires 10 times less water.

Certainly, this technology requires comparatively high initial investments. However the more expensive the equipment, the higher is the capacity and output of the fish farming system.

The core of the project lies in testing adopted system of fish farming for the conditions of Uzbekistan and promotion of this technology as wide as possible in the areas around natural reservoirs with active illegal fishing extraction.

Part of the fish harvest produced on the plant within the project will be donated to an orphanage.

Water → energy → flour

Photo by Garriy Baymatov

The village Chosh (Uzun district, Surkhandarya province) lies on the altitude of about 2,000 meters. The road to this village is already an adventure with steep, breath-taking precipices on its both sides. The village makes home for 1,100 people, and there are 5 more similar villages in the nearby mountainous area.

Inhabitants of the village live a peaceful lifestyle, growing fruits, vegetables and wheat for themselves. However, it is hard to make flour. In summer, electricity cut-offs is a regular phenomena and in winter – electricity is almost a miracle, because of snow-avalanches that sweep away electricity lines every year. In order to make stocks of flour, inhabitants take wheat for a long, rough and winding mountain road to the regional centre Uzun, situated 100 km away from the village.

Is there something that can be done to ease the life of Chosh villagers? People of the village came for an advice to a doctor in the rural clinic - Alexander Glazkov. Somehow they found information about the GEF SGP. And they started to work. Local doctor carefully studied how our programme works. They understood that if the energy is needed, it should be “green”.

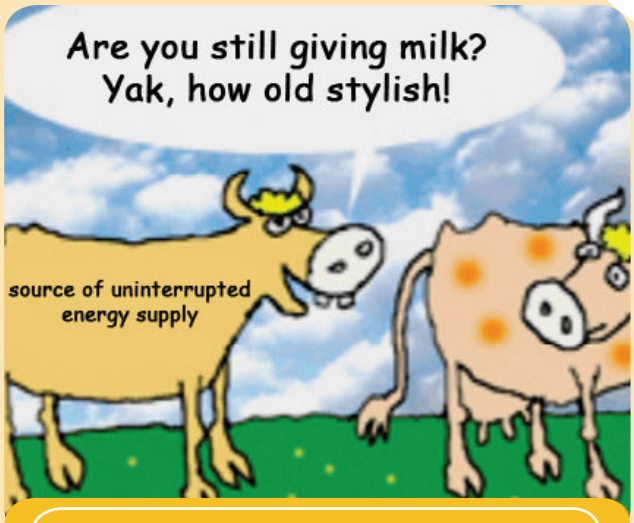
The only seemingly suitable solution both for the needs of people and for environment turned out to be micro hydro station. The river Tupolon flows right through the village. The river is rather steep and does not freeze in winter. The drop level in altitude is also substantial. One last thing that seems quite natural is to build a system that would allow dropping water to rotate a wheel generating electricity. Now water falling from height of 3,5 meters rotates a wheel connected through a shaft with an electro generator and produces electricity of 12-15 kW*h.

Project title:
Introduction of the micro hydro power station as an alternative energy source for community needs in Chosh settlement
Applicant:
Village Council of Chosh
Responsible team leader:
Glazgov, A.A.
Work: +998 76 412 25 38
Mob: +998 93 387 88 69
Grant from the GEF SGP:
28 000 USD
Co-financing from other sources:
30 000 USD

This suffices to grind wheat into flour for all villagers. Now when they have their own mill, they will not have to travel long distances, spend extra money and will always have flour for bread! Every villager can grind its wheat for a modest fee. The fee is collected by the miller and provides resources for maintaining the mill. Nearby villages can also use the mill.

At present, the hydro station is constructed and generates electricity for the mill. Villagers are deciding how fairly distribute surplus of electricity among themselves. Preliminary calculations show that the hydro station will prevent annual emissions of 32 tons of CO_2 equivalent. And the convenience for people is hard to calculate!

We hope that the project would serve as an example for people in numerous mountainous villages of our country how to meet their energy needs and be harmonious with the environment.



Biogas technology – an alternative source of energy for heating and electricity generation

The GEF SGP started two demonstration projects dealing with biogas technologies. One demonstration biogas plant will be constructed on a field base of Urgench State University, as an award to a winner of 2009 innovative fair that took part in Tashkent. The second demonstration plant will be put into operation on the territory of "Nadejda" farm in Khavast district of Sirdarya province.

At present, rural regions of our country face a real problem with constant electricity cut-offs. Farms in rural areas suffer from this problem too. The electricity is supplied often only in morning and evening hours. Consequences of power outages are especially severely felt in cold season, as many households get heated by electric tools and cook food on electric stoves. The absence of electricity and little pressure in gas pipelines in winter drive people to use wood fuel and coal for heating and cooking. This increases the rate of widespread logging of all vegetation and greatly affects the whole ecosystem.

During winter the heating problem is acute even for livestock. Farm facilities for breeding and keeping young animals are not heated and this results in stunted growth of animals.

Besides, the use of electricity for heating is very expensive and not effective.

Project title:
Demonstration of biogas technology use in Syrdarya province as an alternative energy source for generating heat and electricity
Applicant:
Charity Fund "Makhallya" of Khavast district, Sirdarya province
Responsible team leader:
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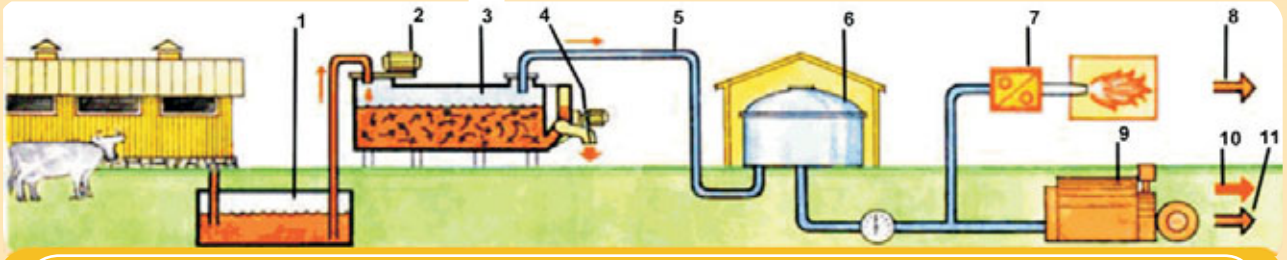
Mob: + 998 97 358 37 39
Grant from the GEF SGP:
21 296 USD
Co-financing from other sources:
21 571 USD

All these problems push agricultural producers to search for alternative solutions to their energy needs. One of the possible solutions can be wide introduction of biogas technology in Uzbekistan. Most of the livestock is pastured during summer but kept in stall in winter when raw material for biogas plant is most needed as in winter time energy consumption peaks everywhere. Manure from livestock is stored in pits or piles until it is ready for use on fields. In other words manure is in great abundance during winter.

Storage of manure creates conditions for anaerobic fermentation, which leads to methane (CH_4) formation and emission into the atmosphere. Methane is one of the most widespread and harmful GHG for the global climate system. On the other hand, this is one of the main hydrocarbons used by people for satisfying energy needs. The largest part of the biogas compound

Alemans, an ancient tribe, thought that the gas, collected in swamp pits is the breath of a dragon. They hit upon an idea of sewing leather tents, collecting the gas and channelling it through leather pipes to their shelters, where they used it for cooking.



On the scheme: 1 – a well for manure swill, 2 – pump, 3 – biogas reactor, 4 – residues from the process (organic fertilizer), 5 – biogas, 6 – storage of biogas, 7 – gas burner, 8 – heat, 9 – generator, 10 – electricity, 11 – heat.

Photo by Atabek Atamuratov

is methane and thus it can well be used as a good energy source. Thus, by burning biogas, we both prevent emissions from using conventional energy sources substituting it with the energy produced by biogas and also helping to prevent direct emissions of the methane from the manure pits. How does the burning help if during it CO_2 is also emitted? Simply because the heat effect of methane for the climatic system is 21 times higher than that of carbon dioxide. In other words by catching methane from pits and piles and burning it, we do not only get heat and/or electricity but we also substantially reduce pressure (by 21 times) on global climate system.

Production of biogas allows reducing methane emissions into the atmosphere. Methane contributes to the green house effect 21 times more than CO_2 and remains in the atmosphere for 12 years. Methane trapping is the best short term solution to the problem of global climate change.

This seems to be mutually beneficial situation both for environment and for people, and thus it is so important. Nowadays, nobody cares about environment unless it is economically profitable. This is why we are seeking for solutions with a profit for people. In this particular case, use of biogas will let "Nadejda" farm to have its own autonomous system of energy supply. The main products of the plants will be power and organic fertilizer that will be used by the farm for the fodder crops production.

The organic fertilizers produced during biogas plant operations are used for crop production and substantively reduce the need for mineral fertilizers. Decreased amount of mineral fertilizers help to protect aquifer.

The first documented biogas plant was constructed in Mumbai (India) in 1859. In 1895, there are records that biogas was used in Great Britain for street lighting. In 1930, with the development of microbiology, a bacteria which is responsible for methane formation was discovered.

The fertilizer produced as a by-product of the biogas plant can be immediately applied to the crop fields; it has effect on plants instantly; decreases acidity of soils; and increases resistance of the plants to external effects such as droughts, for instance.

This kind of fertilizer can be used in all climatic zones of the country, for all types of soils increasing their fertility.

Biogas construction works
(Photo by Atabek Atamuratov)

The idea is that the produced biogas will be used for heating the facilities for livestock, cooking of food for workers and livestock. Part of biogas will be utilized for electricity generation for farm lighting and various equipment. Electricity will also be feeding power for a pump that pumps water for farms nearby and human settlements. Farmers of the area have already shown great interest to the technology and await completion of the project to see its finalized results. □

Photo by Alexander Sorokin

Desert comes back to life

A lot has already been written about this project. And it is worth to be written about. The official title of the project – "Conservation of biodiversity, rehabilitation of the desert biocenose structures and ecological formations of the South-western Kizilkum desert in surroundings of Bukhara-Karaulbazaar". A great deal of interesting and wonderful work for preservation of rare and valuable biodiversity of our desert is hidden behind this dry title.

The project is implemented by young specialists on biodiversity in co-operation with team from the eco centre "Djeyran" (www.ecocenter.uz) located in south-east of Kizilkum desert, 42 km from Bukhara city. Ecocentre has the status of a protected area and received wide recognition as one of the most effective centres in creating and sustaining populations of rare ungulate animals. The ecocentre created viable populations of djeyrans (*Gazella subgutturosa*) – IUCN Red List vulnerable decreasing species; kulan (*Equus heminus Pallas*) - IUCN Red List endangered species and extinct in nature in many countries; and Przevalskii horse (*Eguus przevalskii*) - extinct in wild (global population is approximately 3,000 animals). Besides, other types of animals and plants live on the territory of Ecocentre, which are red listed in national and IUCN books with different status.

Then what is exactly the problem one may ask? If ecocentre works so well, why helping it? The problem is that ecocentre did so well that the number of animals reached the top for the limited territory of ecocentre. The ecocenter territory is not able to feed that many. Population go down, then up again letting the carrying capacity (fodder availability) of its territory regulate populations' sizes. Should then the ecosystem be left alone and all the work on further growth of the rare, endangered species populations be stopped? Certainly not. For further progress one need to expand the territory of the reserve to create additional chances for populations' growth.

To prevent further death leaps of population sizes and create conditions for growth of ungulate animals' pop-

Project title:
Conservation of biodiversity, rehabilitation of the desert biocenose structures and ecological formations of the South-western Kizilkum desert in surroundings of Bukhara-Karaulbazaar
Applicant:
Eco centre "Djeyran"
Responsible team leader:
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Tel: + 998 97 159 04 23,
+ 998 97 159 18 12
Grant from the GEF SGP:
49 000 USD
Co-financing from other sources:
113 260 USD

To grow 1 kg of rice, minimum 3,000 litres of water is required. In average, a person consumes approximately 58 kg of rice a year

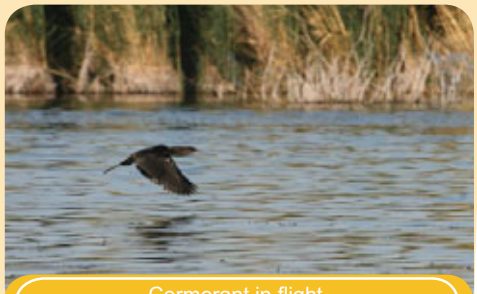
Running kulans (Photo by Alexandr Sorokin)

ulation with the purpose of their further reintroduction on the territory of Uzbekistan in future, where they had lived earlier, something should have been done.

The project split the work between the following activities:

1. As the key element for the future ecocentre preservation work, it was decided **to expand the territory** – more land, more natural desert plant communities which give forage for animals. Next to the ecocentre, there is a vast desert area of 27,350 hectares. This area can be organically added to the ecocentre. There are no strategic objects located there; there is no need to fence the territory as it is bordered by existing irrigation canals and animals will not go away from the territory; there are not big residential complexes around. This all means that pressing on animals can be limited to minimum. By now, the project succeeded in joining only 9,396 hectares of the new area to the former 5,145 hectare of the ecocentre. The area has been successfully cadastered as the new area of the ecocentre. We hope that the governing body of the province will agree to join the rest of the contiguous adjacent territory.

2. **Separation part of the animals (kulans, Przevalskii horses) and moving them from the existing territory of ecocentre to the newly joined territory** – When populations are split in two parts and one is resettled to the new territory, then both parts will have enough fodder for further development.



Cormorant in flight
(Photo by Timur Kaysarov)

3. **Protection of animals** – New territory means new standards for protection. It is important to create all conditions for resettled animals to feel secure and protected and not left to the mercy of fate.
They must be protected from poachers, illegal livestock grazing, gypsium mining operations, uncontrolled driving across the territory, illegal use of land, etc. This is done by installing turnpikes, signs, construction of watch-tower and improvement of the ecocentre management.

4. **Improving management and infrastructure** - In order to manage effectively, it is important to clearly determine duties and responsibilities of all personnel. Who is responsible for what and how the responsibilities should be carried out and how to determine their success. The project plans to produce an appropriate management plan, with concrete work plan.

For personnel to effectively fulfill their duties, they need infrastructure. The GEF SGP could not invest much, but it worked as a trigger for other sponsors to join the project and invest in the ecocentre's infrastructure development. Particularly, it would be worth mentioning Shurtan gas refinery plant (SGRP), which has already invested more than 200 thousand USD against 60 thousand USD originally earmarked for the project in construction of a new caging complex for animals. Navoi smelter plant announced commitments to build water supply system for the newly joined territory.

Photo by Alexey Volkov

5. **Elaboration of mechanisms for ecocentre's financial sustainability** – The first and the main source of ecocenter financing remains to be state support. However, the project is putting first bricks in future financial injections into the centre budget by creating eco-tour product. This product will be in form of carefully designed excursions across the territory of the ecocentre for sightseeing animals in the wild - "Uzbek Safari" excursion across a newly joined territory of ecocentre.

In fact, the project helps to create a model protected area – perhaps a future ***national park***, which will harmoniously combine preservation of ecocentre's biodiversity and its rational use. Many thanks to project team - Natalya Vasilyevna Soldatova, her son Valentin Soldatov, Anna Ten and Timur Kaysarov!

Garden instead of a desert

Probably every citizen of Uzbekistan at least once in his life has been driving along Tashkent-Samarkand highway. He/she couldn't but notice a rigorous and at the same time beautiful landscape along the road when crossing Jizzak region. This territory, like majority of the territories of the country, lies in desert or semi-desert zone. Environment is especially fragile in such regions. Any human interventions can result in degradation of the arid ecosystem. The worse all the ecosystem services function in such areas function, the less fertile the land becomes, the more difficult the life of the people living around becomes. Less crops, less grass on pastures imply diminishing incomes of local population and, in return, more problems for the Government.

The situation is more and more aggravated by growing water deficit: precipitations are decreasing, they are unequally distributed; the question of their availability is more and more unpredictable. We call this a global climate change.

Global problems entail local ones. And they can be resolved only on a local level. Everybody can contribute at least something. In Farish district of Jizzak province, in the settlement of Narvon, there lives Bastamkul Sayitkulov, a farmer specializing in livestock breeding. He has plenty of land, but water is in shortage. Bastamkul has a dream to create a garden so that all people living in this area remember his name. But how to create a garden in the place where the annual amount of precipitations is not exceeding 300 mm?

Those who are recovering from a disease will probably appreciate valuable properties of pistachio; the nut will be useful for those who is suffering from liver disease, nausea, hepatitis, and as a means of prophylactics of heart problems. When choosing pistachio it is necessary to remember that green color of a kernel says that the nut is ripe. That is why the greener the pistachio, the more tasty they are.

The farmer came to us asking for help in bringing him water to his fields. A lot of people come to us with the same request. We explained to the farmer that having plenty of water is not a real way out. We all have to learn how to live in the conditions of water shortage. "Do you want us to show how with a small amount of water it is possible to create a garden so that to raise income? There is a probability that the income raised from the garden will convince you to change your farming activities from livestock towards gardening" - that was the question we asked him. There are a number of tree species which can grow in these dry conditions. Everybody knows pistachio and almond trees. There is a legend about pistachio, that the tree usually grows near the places where saint people were buried. That is why there is a prejudice that there is no need to plant a pistachio tree, it should grow by itself. I don't know why, but there is no prejudice against cutting pistachio trees...

Project title:
Demonstration of alternative farming methods in arid zones as away of adaptation to the changing climate conditions on the example of "Mukhamadamin" farm in Farish district of Jizzakʁregion.
Applicant:
Association of veterinarians of Uzbekistan
Responsible team leader:
Bastamkul Sayitkulov
Work: + 998 71 268 18 45
Mob: + 998 97 102 37 35
Grant from the GEF SGP:
46 722 USD
Co-financing from other sources:
46 765 USD

Within out project carried out on the land of Bastamkul, all those who live in the area nearby were able to see and learn how to plant pistachio and almond trees, how to take care of these plants, how to water them in a very simple way with a small amount of water. We were glad to see that local citizens taking part in planting process secretly put seeds and seedlings in their pockets. This was the sign of their understanding benefits of planting such trees and it meant that they would do the same of their own land lots. The more trees people will plant, the better it will be both for them and for environment.

The most remarkable name was given to the nut by the Chinese. They called it "happy nut", because the crack between the shells of fried pistachio looks like a smile.

To make water available for this work, the project helped to install a wind-solar generator which generates electric power. Power is used to pump water from the well. This way we resolved the problem of electricity cut-offs and the farmer has water readily available 24 hours seven days a week. The pump is not very powerful and cannot pump much, but the water delivered is enough for taking care of the garden. Altogether over 40 hectares of land was planted with pistachio trees and other drought resistant species.

Currently the project is preparing instructions on "How to plant and grow pistachio". The manual is designed for a wide distribution among other farm-

ers having similar arid conditions in Jizzak and other provinces.

Effective management of croplands implies not only accurate use of land and obtaining revenues from marketing the harvest. It also suggests practice of sustainable land use that brings no harm to the ecosystem and allows maintaining sound and healthy conditions for croplands' fertility. This can be proved by the example of "Mukhamadamin" farm in Jizzak region. The farm started growing pistachio, dog-rose, apricot, apple trees, walnuts, almond and Crimean pine. The farmer had to purchase 4000 seedlings of pistachio, 2800 plants of a dog-rose, 250 apricot

Sprouting pistachio nuts (Photo by Garriy Baymatov)

and apple trees each, 500 plants of walnut, 600 of Crimean pines and 420 plants of almond trees. While planting the trees very simple but efficient irrigation technology was used - a plastic bottle turned up side down with the bottom cut off. For power generation the project also experimented with hybrid wind-solar system. In general the project demonstrated a number of ways how to adopt to new practices and shift the focus from livestock breeding to gardening, for example. Projected benefits obtained during the project are multifaceted: vegetation of the area is recovering, land degradation is stopping, the whole ecosystem of the area is improving and the farmer will hopefully getting a stable, long term, sustainable income.

Correct planting process and further care of the plants are only part of the job. The project also tested the technology of low pressure dripping irrigation trough polyethylene hoses developed by the Institute of water problems under the Academy of Science of Uzbekistan and the Tashkent institute of melioration and irrigation.

Regretfully this technology has not proven to be efficient – the polyethylene is breaking and should be often replaced. But negative result is also a result. Now we know that on the open areas this technology doesn't work. We had to use simple ways like using plastic bottles or just irrigating by small canals. Water is pumped from underground well and its delivery should also be rather cheap. For that purpose two wind generators have been installed as well as 8 solar panels which generate energy for the pump.

Europeans believe that if lovers enter a pistachio grove and hear a crack of opening nuts, their lives will be rich and happy.

The land plot is fenced, the trees planted, technologies introduced – what's left for the maximum effect from the work done? It is very important that the results obtained in the field are supported by knowledge shared with the farmers. For that purpose all technological stages of creating of this small economically and ecologically balanced mini-park was accompanied by workshops and trainings targeting sound land use. At the moment the project is working on a cost-benefit analysis of the pistachio growing practice. This analysis should determine actual costs and benefits of the practice and compare them with other agricultural practices people of the surrounding areas are engaged into. Should the CBA show that pistachio growing clearly outpaces economically other practices, the project will widely distribute this information to persuade people living in the same arid condition to start pistachio growing business as an alternative to livestock breeding or other damaging practices.

Photo by Garriy Baymatov

Before the project started, water deficit allowed only rain-fed agriculture of a limited quality that resulted in engaging in practices that deteriorated lands. Livestock grazing added to this deterioration a lot further degrading the land which was not rich in the beginning. Among the land lots around where livestock grazing is taking place and where humanly-induced negative effects are felt more and more, this plot of land can well become a model of sustainable practices that can both halt land degradation, demonstrate how to adopt to changing climatic conditions and how to obtain sustainable income.

Is it possible to improve our soils, save water and increase productivity with the help of a laser?

How to improve land, save water and increase crops with the help of lazer?

Within a GEF SGP project, farms of Koshkupyr and Urgench districts of Khorezm region started to use a new technique of lazer leveling, new for our farmers. The technique allows reducing irrigation water consumption up to 15-25% while improving the quality of soils and increasing crop harvest up to 10-20%.

Difference between a field table leveled by lazer planner and a land plot where planning was made by ordinary equipment can be seen with a naked eye. Nazirbay Ibragimov, head of NGO "KRASS" (www.krass.uz), Khorezm rural agro services support center, says that with the help of lazer planner it is possible to level a field where level difference is up to 50 sm.

How does it work?

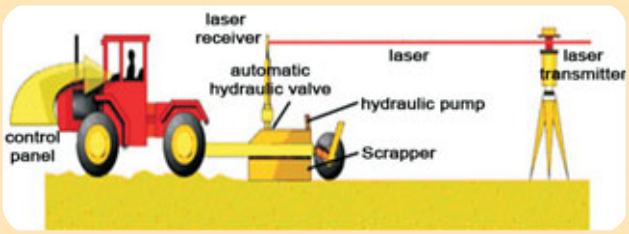
NGO KRASS at work

Currently fields' planning (leveling) is made with help of regular planners (scraper). A field in this case is leveled approximately and as a result it becomes not even with ups and downs all over the field. In order to irrigate a field leveled by this method, the farmers have to inundate it with as much water as it takes to cover the whole area, including heights. In some cases, when watering a field, to have a 15 sm. level of water at one end of the field, results in 50-60 sm. of water at the other side of the field. This certainly increases water consumption which is in scarce supply almost everywhere. Because of such losses, many farms situated downstream of the irrigation system, can often be left without water at all. In order to overcome these drawbacks the farmers have to divide the fields into smaller land plots – "cheks". This increases costs by additional cultivation of land: more gas and oil is spent, more labor and time, and of course, more water is consumed for irrigation.

Project title:
Promoting resource efficient technologies for sustainable development of irrigated land cultivation in Khorezm region of Uzbekistan
Applicant:
NGO KRASS
Responsible team leader:
Akramkhanov Akmal
Work: + 998 62 226 21 19
Mob: + 998 93 181 83 18
Grant from the GEF SGP:
49 833 USD
Co-financing from other sources:
51 602 USD

It is especially important for the Khorezm region, where the land degradation has increased during the past years and where the water is in constant shortage. That is why introduction of the technique in Khorezm is in special demand. But this is only a hypothesis. The results will be seen only at the end of the project.

What is LAZER PLANNING? A lazer planner is a device consisting of three parts. One of them is a *transmitter* – fixed at the edge of the field. According to the programmed level it sends a lazer signal to a *receiver* - a device installed on a tractor. This is the most technological part of the device. Receiver develops a signal and gives a sign to a scraper which is moving after the tractor. The scraper is moving up or down depending on a given signal for the determined level and takes off the extra amount of soil from the heights and places it to lower parts of the field. Repeating this operation again and again, the lazer planner levels the entire field bringing it to one and the same level and making it absolutely flat and even.



A tractor driver needs just to switch on the receiver and drive the tractor. All the rest is done automatically. After the field is leveled and has equal levels everywhere, it needs less water and time for irrigation; also there are a lot of other indirect savings of labor and resources.

A costs and benefits analysis of the technique will be presented after completing all the calculations at the end of the project.

Every year we throw away about 28 billion of glass bottles. It takes one million years for a bottle to be utilized by nature

Laser during the work (Photo by Alexey Volkov)

How did it start?

Khorezm agro-consulting center «KRASS», created in the course of implementation of the joint project of ZEF-Bonn and the Urgench State University, unites gifted Uzbek scholars working on the problem of land degradation. The project and the center experts carried out a number of researches which proved clear feasibility of introducing the method of lazed planning. The Centre has developed and suggested the project on introducing of this technology to farmers. The project was supported by the GEF SGP and is currently being implemented by multiple partners.

The project demonstrates introduction of the lazer planning technology in two Water User Associations (WUA) – "Ashirmat" and "Amir Temur". These WUAs were given sets of lazer planning equipment free of charge for the project life time. The WUA members are being trained to use this equipment. During the time of project implementation these WUAs should evaluate benefits of this technique and hopefully purchase their own set of devices. Sets procured during the Project will be transferred back to NGO KRASS and be further used in other WUAs of the region.

More about the project see – www.sgp.uz

No tillage costs result in good harvest and water saving

Photo by Alexey Volkov

All our farmers got used to the fact that every year – in spring, summer and autumn, each of them have a hot season – the time for land cultivation: tilling, harrowing and dragging, etc.

But a few know that all these operations are harmful to soils. Besides, all these operations result in accelerated mineralization of soil and emissions of a strong GHG - nitrogen dioxide (N_2O). This gas is even more harmful for the climate system than methane. It possesses great heat trapping capacity.

All these can be escaped. This is the main objective of the project being implemented in the settlement of Jaykhun, of Kanlykol district, Republic of Karakalpakstan.

How to solve the problem?

Conservation agriculture is a response to many questions. What is conservation agriculture? In fact this term includes several integral parts:

- *zero or no tillage of soil;*
- *keeping vegetation residues on the surface (mulching);*
- *crop rotation;*
- *in our conditions creation of protective wind breaking forest stand along the fields.*

Why this kind of land use practice is not used in Uzbekistan? This is an open question. We cannot find an answer to it. But we can try spreading a word about this useful agricultural practice and expand it to as many farmers as possible.

What are expected results of the project?

The project implementation will result in:
1. A way of water saving for irrigation by 25-30% will be demonstrated;

Project title:
Introducing no tillage technology for soil protection at the demonstration site of Jaykhun village as a means to reduce GHGs emissions to atmosphere and a way of most sustainable land use in conditions of water shortage caused by climate change
Applicant:
CBO Jayhun
Responsible team leader:
Aybergenov Bakhyt
Mob: + 998 61 575 05 14
Grant from the GEF SGP:
41 539 USD
Co-financing from other sources:
39 817 USD

2. A way of reducing labor and energy costs by 70% will be demonstrated.
3. Demo field on conservation agriculture created on 10 hectares. At the demo field the techniques and methods of soils restoration, water saving, crop rotation, organic agriculture and melioration will be demonstrated. The main attention will be paid to application of no tillage being the most important component in the conditions of droughts. Demo field is being established for farmers of Jaykhun settlement, as well as other farmers of Kanlykol and other districts of Karakalpakstan.
4. GHG emissions reduction, the amount will be calculated at the end of the project. Emission reduced will be counted in the equivalent of CO_2, including the reduction caused by avoiding of use of machines for land cultivation, fuel saved and N_2O reductions. Calculations will be compared with control fields;
5. Improved productivity of partially degraded 10 hectares. Expected increase of humus content in soils is 0,02 – 0,04 %; land humidity will increase by 2,5 – 3,2 % in comparisons with traditionally cultivated fields. Seasonal accumulation of salt at the higher levels of soil in demo field will decrease by 1,6 – 3,0 times.
6. At least 14 trained farmers who will participate in the conservation agriculture trainings and be able to apply the obtained knowledge at their own fields. Not less than 30 farmers from other districts will be informed about the technology and will get instruction on how to use it.
7. Purchased equipment that will remain in this area for further use after the project completion;
8. 1000 published copies of the detailed manual on how to use the new technology and distributed among interested farmers.

For more information about the project read the project document on our site www.sgp.uz

Picture by Alexandra Povarich

Contest of stories «How I helped to conserve environment»

We are announcing a contest for the best story telling about how you protect environment. Probably not really protecting environment, but at least how you do something that contributes in a way to environment protection. Anything will do fine. You can help the nature by different ways. What is important for our contest is the way you put it. The story should be written in a catchy way. Think over the story and send it to us. You can write either in Russian or in Uzbek.

We will post your stories so that many people could read them. Perhaps it will motivate someone, maybe not. It could be a lyrics or satire, or even fantasy or science fiction.

At the end of the year we will determine the winner and he or she will get an award.

The stories for the contest should be submitted before 30 December 2010. You've got some time to think!

Don't delay it. When you put the things away thinking that you will do them later, the "later" never comes. Just sit and write your story now! Any story! But keep the main idea: show how environment appreciates your action.

Send the stories to alexey.volkov@undp.org.

The Global Environmental Facility's Small Grants Programme in Uzbekistan

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