

Capacity Building and On-the-Ground Investments for Sustainable Land Management

Programme Area: Environment and Sustainable Development		
Budget:	Project Number: 00056220	Duration: November 2007 – November 2010
2008 – USD 353,673 2009 – USD 704,114 2010 – USD 740,202	Funded by: UNDP, Global Environment Facility (GEF), German Agency for Technical Cooperation (GTZ), Government of Turkmenistan	
Partners: Ministry of Nature Protection of Turkmenistan		
Executing Agency: Ministry of Nature Protection of Turkmenistan		



Background:

More than 80% of the surface area of Turkmenistan lies within the region of the Karakum desert". The climate is distinctly continental with hot, dry summer months, cold, dry winters and only very limited precipitation during spring and autumn. The pasture management, formerly characterized by nomadism, was intensified since the 1920s and the people were sedentarised. Pasture lands degrade and are being actively destroyed. The arable lands of the country are intensively farmed and irrigated, often applying outdated farming practices, notably for grain and cotton production. Arable lands face salinization and the soil loses fertility. Cleared mountainous forest areas are not able to rehabilitate due to the pasture pressure and remain destroyed. Local water springs dry up due to increased water erosion.

Objectives:

The project is part of the Central Asian Countries Initiative on Land Management (CACILM) developed to strengthen the implementation of the UN Convention to Combat Desertification (UNCCD) in the region. It enhances the capacities of the land users for sustainable land use practices and the political as well as institutional frame conditions. The project seeks to overcome the existing inconsistencies and disconnections between the policy framework for land management and actual needs of land users by initiating a participatory dialogue with involvement of the key ministries, local government and local land users.

More specifically, the project will provide support for:

- i) Developing stronger capacities for sustainable land management among the users
- ii) Improving knowledge base and develop best practices in land use
- iii) Supporting the development of a stronger institutional and policy framework for SLM
- iv) Introducing adaptive management and learning for sustainability of project results

Project achievements:

The project demonstrated new sustainable approaches to land management through on the ground investments in 3 ecologically different regions: the mountainous area of Kopet Dag; the sandy desert region of Karakum and the area of intensive irrigated agriculture of Mary. In all three sites local communities were mobilized to identify and implement integrated solutions to land degradation problems. More specifically, sustainable pasture management practices were introduced, alternative sources of income for the population have been identified and supported and technical measures to prevent further short terms damages of wind and water erosion as well as salinization processes were put in place. Mechanisms for sharing these practices across the country are currently being developed. Along with technical measures, applied scientific research was also conducted, such as mapping and analysis of pasture management in Karakum; monitoring of the level of soil mineralization and ground waters in Sakarchaga, study of methods of pest control and simulation of growth of *Juniperus turcomanica* seedlings, conducted in collaboration with Turkish experts; and monitoring of pastures in Nohur and Karakum with use of GIS technologies together with experts from Heidelberg University.

Project site in Karakum

For centuries, Karakum sand desert with strong continental climatic conditions and yearly highly fluctuating precipitation was used by nomadic livestock breeders as extensive pasture lands. As people settled in villages, traditional practices of pasture management were forgotten, and the lands started to be intensively exploited, especially around the villages and water points. Saxaul bushes are being dug out and used for heating and cooking purposes as other alternatives are either too expensive or not available. Saxaul disappears and, due to the overgrazing of the land, may not recover, which results in developing of moving sand dunes that threaten the houses and other social infrastructure. Furthermore, the degraded pasture lands do not produce sufficient fodder for the animals.

To address these problems with long term solutions project activities in several settlements of Rukhabat Etrap of Akhal Velayat, concentrate on improvement of the pasture management and stabilization and reforestation of moving sand dunes.

With active participation of local population and local authorities, the following results have been achieved to date:

- About 30 hectares of reed reinforcement was installed for sand dune fixation.
- In 2010 saxaul seedlings were planted on 27 hectares for reforestation.
- 8 new wells were constructed and 6 old ones repaired in order to improve access to water at distant pastures, thus expanding the area of pasture land in regular use.
- Central heating system using is being installed in a local school (to replace the old system, which used to burn up to 200 tons of saxaul bushes per year).

Project site in Nohur

Nohur, in the Kopet Dag mountain range, is situated at the border with Iran. The natural Juniperus forests were cut down to be used for heating purposes. The barren soil of the hills does not capture the rain water, so the local ground water reservoirs remain unfilled. Due to water shortages, local people gave up gardening, concentrating exclusively on livestock breeding. The pasture lands become overused, not letting the fodder for the animals re-grow on the stripped land, resulting in further erosion of the hill slopes. To stop this vicious circle, the project, active in two settlements of Nohur - Garawul and Konegummez, in Bakharly Etrap of Akhal Velayat, aims to revive gardening and support reforestation. With active participation of local population and local authorities, the following results have been achieved to date:

- 2 new deep wells were drilled to improve the water availability for the population.
- 17 small water infiltration dams were constructed on the cleared slopes to increase the infiltration of the rainwater into the soil, as short-term solution. The dams constructed in ravines capture the water streams, which form during heavy rains, thus increasing the moisture in the soil and assisting in restoration of the vegetation.
- Juniperus seedlings sufficient for reforestation of 42 hectares were purchased and planted together with local population. Reforestation and sustainable management of the Juniperus forests is essential for water erosion in the long run.
- Drip irrigation systems for 10 ha orchid to be set up in Konegummez settlement were procured. Gardening will become an alternative to livestock breeding as a source of income for local population. Agreements for gradual reduction of a livestock of cattle are signed with the villagers participating in the scheme.

Project site in Sakarchaga

The oasis Mary is considered to be a primary centre of arable farming in Turkmenistan – for cotton, grain and vegetables. But due to a combination of local condition and unsustainable land management practices, the soils are heavily salinated, yielding very modest harvests. Project activities on the territory of Dayhan Farm "Zachmet" in Sakarchaga Etrap of Mary Velayat, focus on regeneration of soil and the efficient management of water resources. With active participation of local population and local authorities, the following results have been achieved to date:

- Project recruited the National Consultant on study of melioration condition of lands. According to his recommendations it was conducted works in field on restoration (clearing from bushes, ploughing up, planning, levelling of soil surface etc.) degraded lands and returning them back to application.
- In 2009, the National Consultant of the project have assisted 352 water users in developing plans for efficient water-use, as well as developed detailed recommendations for restoration of the degraded land.
- One new collector 3,3 km long was constructed and an existing channel of 6,4 km was mechanically cleared to improve collection of drainage water.
- 20 measuring points were installed for monitoring of the level and mineralization of ground water, with 40 additional ones to be installed before the end of the year. The special equipment, which would allow to conduct constant monitoring of the changes in ground water levels, as well as the degree of mineralization of water and soil, was procured and delivered to the project site.
- 50 ha of degraded land was restored through clearing from bushes, ploughing the soil, as well as landscaping and leveling the soil surface; and further 35 ha were desalinated through preventive levelling.
- 2 aqueducts, 2 water measuring devices and 8 water regulating devices were constructed for the rational use of water resources.

Planned activities

In 2010, the project will focus on finalisation of community-based activities at three project sites. At Karakum, 2 water reservoirs of 50 m³ each and 3 new wells would be constructed and 2 broken wells would be repaired. At Nohur, drip irrigation system would be installed on 30 ha of gardens, and drilling 3 new deep wells will take place. Both at Nohur and Karakum sites, reforestation work will continue, with further 100 ha of Juniperus turcomanica and 30 ha of Saxaul to be planted. At Sakarchaga, 2 water regulating devices and 40 measuring points would be installed. In order to enhance the technical capacity of land users in all three sites, series of trainings on pasture land management and sustainable agricultural management would be conducted. To institutionalize capacity building practices and disseminate the technical knowledge of the sustainable land management approaches piloted through the project activities, as well as to raise awareness of modern land use practices among farmers, a rural advisory service would be set up at Mary region. The project will disseminate project results for replication at the local, regional and national level, taking active part in exhibitions, workshops and conferences, and organizing a national conference. On policy level, the project aims to develop recommendations for the improvement of institutional and legislative frameworks for land management. The project also foresees to actively support the revision of the UNCCD National Action Plan for Turkmenistan through strategic discussions about the synergies of combating desertification, biodiversity protection and the adaptation to climate change and its implications for national strategies.

Project Contact Information	
Location and coverage:	Rukhabad Etrap and Bakharly Etrap of Akhal Velayat; Sakarchaga Etrap of Mary Velayat.
Project Manager:	Mr. Muhamet Durikov Address: National Institute of Deserts, Flora and Fauna of Turkmenistan, 15 Bitarap Turkmenistan Str., Ashgabat, 744000, Ashgabat, Turkmenistan Tel: (993 12) 35 72 98 /Fax: (+993 12) 39 64 08 E-mail: durikov@mail.ru
National Project Coordinator:	Mr. Bekmurad Eyeberdiyev, Head of International Department of MNP Tel: (993 12) 39 85 94, E-mail: eyeberdiyev@mail.ru
UNDP Programme Officer:	Mr. Rovshen Nurmuhamedov Address: UN House 40, 1995 (Galkynysh) st., Ashgabat, 744013, Turkmenistan Tel: (+993 12) 42 52 50/Fax: (+993 12) 42 53 17 E-mail: rovshen.nurmuhamedov@undp.org