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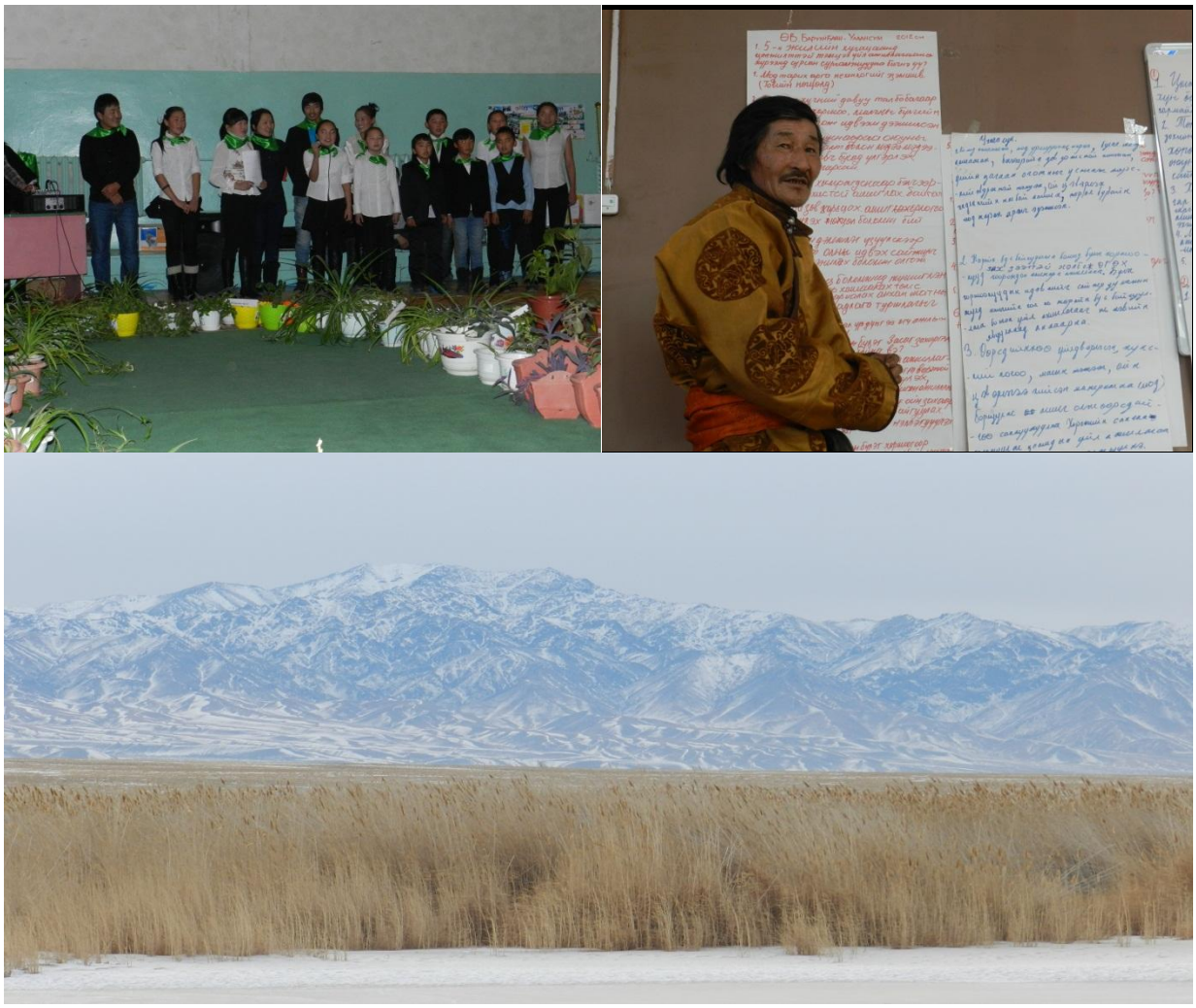
Sustainable Land Management for Combating Desertification in Mongolia – MON/08/301



Report of the Final Evaluation

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Executive Summary

Land Degradation and Desertification is a growing problem worldwide and particularly here in Mongolia where land is open and fairly free to access and livestock herds are for the most part unregulated. According to a UNCCD report, approximately 90% of Mongolia's territory is vulnerable to land degradation and desertification. It is the right basically of every citizen should they wish to herd livestock and place any number of animals on a given pasture and as much as 80% the territory is being grazed. Although global warming and climate change are serious matters that are affecting landscapes, communities and even nations around the world, it is mismanagement of land that is the biggest cause of land degradation and desertification. In Mongolia it is now recognized in the National Action Plan for Combating Desertification (NAPCD) and the new Law of Mongolia on Soil Conservation and Desertification Control that overgrazing of pasture throughout country is the major cause of soil loss and desertification.

The Sustainable Land Management for Combating Desertification Project – MON/08/301 began in January 2008 and terminates on 31 December 2012. The project document places much emphasis on "local level, on the ground" activities, while building capacity within government land management agencies and academic institutions as well as supporting policy and legislative improvements.

With project support, efforts were made to strengthen the National Committee for Combating Desertification (NCCD), and a package of laws and policies that included revision of the National Acton Plan for Combating Desertification (NAP) and work to improve land use legislation and pasture management, soil conservation and desertification control laws.

Sustainable Land Management classes were added to the undergraduate courses at two universities with project support along with support for MSc and Ph.D studies in SLM, as well as helping to build capacity for new resource persons in the Center for Desertification Studies (CDS) and the Administration of Land Affairs, Geodesy and Cartography (ALAGaC) and other agencies.

The project worked extensively in four aimags, Tuv, Sukhbaatar, Dornogovi and Uvurkhangai and concentrated on 13 target soums. Training in Land use planning and mapping was given to soum land management officers who now use what they learned to create better annual land and local protected area management plans and to work more closely with herder groups and citizens. Over the project lifetime 109 herder user groups were organized along with 13 forest user groups encompassing more than 1200 households. The forest user groups are officially recognized and registered with their respective aimag administrations according to law. Project field coordinators are working with herder groups to register as NGO's to ensure the sustainability of project activities.

74 different types of trainings in pasture management, traditional rotational grazing practices, planting of trees and shrubs along with material support was given to help with well and spring rehabilitation, fencing hay making areas and vegetable growing areas.

The project Mid-Term Report also recommended more effort is put into youth environmental education. The project responded by adopting the eco-school program developed by CODEP, which has become quite popular. Between the two projects areas there are now 69 eco-schools nationwide making efforts at environmental education.

Evaluation process

It was determined from the start of the evaluation that the TE team would concentrate on meeting with people who had the most "hands on" experience and contact with the project. As 2012 is an election year, many of the officials within the ministries and local government are new and unfamiliar with the SLM project or its activities over the past five years. Project documents were researched and meetings with the academic institutions, government land agencies, local land officers, local communities and the CODEP project were sought out to find the most relevant information. Field workshops and visits to target communities were undertaken between 23 November and 02 December and follow-up phone conversation were held to gain additional information as needed.

The TE looked at implementation approach and efficiency, stakeholder participation, sustainability, replication approach, financial planning and cost effectiveness and monitoring and evaluation as well as project outcomes and outputs. Each of these areas were ranked as to their attainment. The ranking is: Highly Satisfactory, Satisfactory, Marginally Satisfactory, Unsatisfactory, and Highly Unsatisfactory. An explanation of the ranking criteria can be found in **annex III**.

Project Outcomes

- Strengthened coordination mechanisms, institutional and human resources capacity and knowledge base to promote SLM and desertification control - *Highly Satisfactory*

- SLM mainstreamed into national, provincial and local policies, strategies and regulatory framework - *Satisfactory*

- Pilot testing, demonstrations and scaling-up community based approaches in integrated natural resources management with focus on grassland and water management and sylvopastoralism – *Highly Satisfactory*

Herder/Forest User Groups and Households

The SLM project supported the formation of 109 Herder Communities (HG), and 13 Forest User Groups (FUG's), for a total of 122 resource user groups. This comprises 1,236 households and 2,781 members in the 13 target soums in the four target aimags. A full listing of all herder and forest user groups for each soum can be found in **annex V**.

Training

According project documents 74 different types of training, exchanges and experience sharing with herder and forest user groups took place encompassing a wide range of SLM, combating desertification and livelihood improvement activities. Over the five year period of the project a total of 8,605 local participants from soum government and herder groups were reached in the soum target areas and were trained in land management planning, vegetable growing, tree planting, producing better milk products, wood product processing, water harvesting, brick fuel production, energy efficiency, barrier construction against sand movement, hay making, pasture management, rodent control (Brant's vole) and herder group leadership and other relevant training. This has laid a solid basis for knowledge sharing and ongoing activities to help sustain local soum and herder community SLM actions after project completion. **Annex VI** lists the trainings that took place between 2007 and 2012.

University and Academic support

Both the National University of Mongolia (NUM) and the Mongolian State Agricultural University (MSAU) have improved their undergraduate course curriculum on sustainable land management and how have 22 (NUM), and 18 (MSAU) post- graduate students enrolled in these courses respectively. The courses have been upgraded and the textbook "Principles of Soil Conservation" (Springer 2008), was chosen to be translated into the Mongolian language as the most appropriate book for Mongolian conditions. Similar land types and challenges face the American west and mid-western areas. NUM began their MSc level course in 2010 with 4 students, 2011 with 7 students and 2012 with 11 students. 4 students, 2 from 2010 and 2 from 2011 have graduated and received their post-graduate diplomas. One of the MSc students won a grant from the project and will complete her course work and thesis in March/April 2013 on land quality monitoring nationwide. MSUA has a total of 18 post-graduate students now enrolled in SLM courses for MSc and Ph.D level diploma.

Publications

The project has produced 28 different publications to disseminate information on SLM on topics that include guides on planting various trees, water and soil management, and the university level text book. Two of the most important publications are the DVD and

guidebook on rotational grazing practices **(annex VII)**. These publications, information of which was not readily available before, provide local soum coordinators, land, environmental and pasture management officers and herder groups with valuable guidelines and techniques for improved SLM practices and have made an impact on the way they understand SLM.

Water, pasture and forest interventions

The project was very active in supporting the rehabilitation of water springs (83) and shallow hand dug wells (89), working with local soum officers and herder groups in best methods to rehabilitate and protect these water sources. New deep wells (engineered) were dug (15) and a number of deep wells rehabilitated (9). Three of the deep wells have solar pumps for bringing water to the surface and don't rely on motorized engines and thus saving benzene costs while protecting the environment. Ponds were also established and rehabilitated early in the project.

Fenced areas for vegetation cover and haymaking were created for protection and fodder production for livestock winter feed. Trees, bushes such as larch, tamarisk, elm and saxaul were started and planted over the course of the project in the target soum areas and almost a million hectares of grassland was protected through traditional agreed rotational grazing practices. This is a substantial amount of land protected for resting and rejuvenation. The table below shows the total numbers of springs, wells, fenced areas protected, tree seedlings for planting and hectares of rotational grazing agreed to.

Figure 1: Total springs, wells, fenced areas, forest and rotational grazing created during the project

		2008	2009	2010	2011	2012	Total
Springs			18	25	17	23	**83**
Wells	New engineering			7	6	2	**15**
	Hand- dug restored			25	30	34	**89**
	Rehabilitated engineering			5	3	1	**9**
Forestry line/ forestry pasture system area (ha)			25.7	4	2		**31.7**
Fenced area (ha)			36.2	33.8	30	14	**114**
Rotation grazing area (ha)				102,400	443,00	416,300	**961,700**
Number of seedlings			8458	4300	300	10000	**23058**
Hay making areas (ha)			9.5	34.8	14	14	**72.3**
Established and rehabilitated Ponds (m^3)			10	8			**18**

Local Protected Areas – Energy Efficiency – Pasture Management

The project has worked with four soums in developing local protected areas and supported efforts to create management plans. Although small in sized, they do add to the network of protected areas around the country in protecting and enhancing biodiversity conservation. It would do the soums well to increase the size of these areas substantially.

With project supported energy efficiency training and interventions in Bogd, Baruunbayan-Ulaan, Uyanga, Zuunbayan-Ulaan, and Bayan-Undjuul soums, training 75 in fuel briquette making, and 65 soum technicians in installing and monitoring automatic boiler controls to reduce fuel consumption. 93 fuel efficient ger stoves were tested with participants stating fuel consumptions had been reduced by 50%. The new building for the CDS Elen Tasarkhai research center partially supported by the project was purposely made for its energy efficiency qualities and as model of energy efficient building construction.

The Pasture and Livestock Management Coordination Working Group was an important feature of the project support, bringing together donors working in pasture and land management with government policy and decision makers. These working group sessions and roundtable efforts at developing better pasture management were instrumental in moving SLM practices forward.

Key Findings

- National Committee for Combating Desertification has been strengthened, Minister of ME&GD head of NCCD taking the lead in the national effort combat desertification
- Enabling Legislation and Policy improved with the NAP for Desertification, Budget law, and Law of Mongolia on Soil Conservation and Desertification Control and pending Law on Pasture.
- Academic Recognition of SLM with NUM and State University of Agriculture upgrading and now teaching undergraduate courses as well as MSc and Ph.D post-graduate studies
- Government Agency resource persons from CDS and ALACGaC trained in LADA ll methodology and recognized by ME&GD as accepted standard practice
- Soum land officers trained in SLM and land use planning using arc/gps and computer software and as CBNRM resource persons working with local herder and forest user groups
- Herder groups trained in Combating Desertification, CBNRM, vegetable gardens, tree planting, alternative income sources and practicing traditional agreed rotational grazing

- ❖ Eco-Schools educating countryside youth now operating in 69 soum schools and multiplying to neighboring soum schools
- ❖ Springs rehabilitated and flowing, Taatsiin Saagan Nuur (lake) re-fills through project intervention and community effort after 12 years of desiccation.
- ❖ Saxaul seedlings successfully regenerate areas for potential saxual forest rehabilitation

Logical framework indicators and targets were reviewed and commented as to targets achieved, based on the geo-physical survey of August 2012, the baseline study of 2006, the project semi-annual reports and training reports, as well as the field workshops, meetings and site visits. This can be found in annex XVI.

The project has achieved much of its targets with influencing enabling legislation and policies aimed at improving GoM actions towards combating land degradation and desertification. Land agencies and institutes, aimag and soum land, environmental and pasture management officers have greatly improved capacity for research and annual land use planning, using up to date modern and standardized techniques.

Universities now offer classes in SLM to undergraduates and have increased post-graduate interest in this field. Eco-schools have been supported throughout the project area to educate countryside school children about the environment and what they can do to combat land degradation and desertification. The public through the mediums of TV, radio, photo contests and the "World Day on Combating Desertification and Drought" have been made aware of and more informed of the challenges that face Mongolia.

Working at the local soum level with herder groups, government officers and citizens, pilot actions have taken place to address the local effects of desertification on the land and socio-economy of households and people. Lessons have been learned through the project and models created that the GoM can act upon to use SLM as a practice to reverse land degradation and desertification.

The cooperation with donor counterparts in the SDC/CODEP has led to a positive effect in delivering the project goal. The overall ranking for the project is determined to be **Highly Satisfactory.**

Acknowledgements

The TE team is grateful to the individuals with the Ministry for Environment and Green Development, the National Committee for Combating Desertification, the Ministry for Industry, and Agriculture, The Center for Desertification Studies and the Administration of Land Affairs, Construction, Geodesy and Cartography for sharing their views, work and support with the Sustainable Land Management Project. The State University of Agriculture and the National University of Mongolia were especially helpful in explaining how project support has helped improve sustainable land management curriculum development in BSc., undergraduate courses and with MSc and PhD., post-graduate degree courses

The individual soum field coordinators, the target soum officers and the community leaders and members who traveled long distances to attend the field workshops and make presentations added much to the understanding of the project activities and the efforts made by all stakeholders at the soum and community level. The field coordinators were ready to help with any request and follow-up.

Within the selected target soums, the school directors and teachers for the eco-school program gave their time to answer questions about eco-school activities and to show the TE team their efforts.

Herder group members also took time to meet with the TE team when visiting their area, generously showing the team around and explaining what has been learned and accomplished with SLM project support.

The project implementation unit was very helpful in answering all questions, arranging the many meetings and logistical support for the field travel to the selected project target sights. The TE team would like to thank them all for their support and timely help when undertaking this evaluation.

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Acronyms and Terms

ALAGaC	Administration of Land Affairs, Geodesy and Cartography
CDS	Center for Desertification Studies
CODEP	Coping with Desertification Project
EIA	Environmental Impact Assessment
FUG	Forest User Group
GoM	Government of Mongolia
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
IGE	Institute for Geo-Ecology
LADA	Land Degradation Assessment
LPA	Local Protected Area
MIA	Ministry for Industry and Agriculture (2012)
ME&GD	Ministry for Environment and Green Development (2012)
MoFALI	Ministry of Food, Agriculture and Light Industry
MNET	Ministry for Nature, Environment and Tourism
MTR	Mid- Term Report
MSUA	Mongolian State University of Agriculture
NAP	National Action Plan
NAPCD	National Action Plan for Combating Desertification
NCCD	National Committee for Combating Desertification
NEX	National Execution Manual
NEMA	National Emergency Management Agency
NGO	Non- Governmental Organization
NUM	National University of Mongolia
PIU	Project Office Staff
SDC	Swiss Agency for Development Cooperation
SLM	Sustainable Land Management
TE	Terminal Evaluation Team
UNDP	United National Development Program

Glossary of Mongolian Terms

Aimag: is the largest political territorial division in Mongolia. It is equivalent to province.

Soum: is a second level administrative subdivision below Aimags, equivalent to a county- level division in the USA.

Bag: is a district within soum.

Khural: is the national or local level parliament.

Ger: the traditional mobile house.

Naadam: a traditional festival. Mongolians also term it as "Eriin Gurvan Naadam" – "the three games of men". The games are Mongolian wrestling, horse racing, and archery and are held throughout the country during the midsummer holidays.

Table of Contents

Figures

1. Background

The 'Sustainable Land Management for Combating Desertification' Project – MON/08/301 Project has been active since 2008 and finalizes at the end of 2012. The project was funded through UNDP, the Government of the Netherlands and the Swiss Agency for Development Cooperation (SDC). The overall budget allocation was $4,150,000.00 USD over a 5 year period. The project was implemented in 13 soums of four aimags: Tuv, Sukhbaatar and Dornogobi in the Central and Eastern forest steppe and steppe area and in Uvurhangai in the south central desert steppe.

The overall goal of the project was to ensure that pasture, agriculture, forests and other terrestrial land uses are productive and sustainable and that ecosystem services and functions that are essential to improving livelihoods and reducing poverty are protected and enhanced, as well as building institutional capacities within government, research agencies and organizations, individual personnel and local communities and demonstrate good practices in Sustainable Land Management (SLM) in line with national economic and social development polices.

1.1 Project Goal, Objective and Outcomes

1.1.1 Project Goal

The long-term goal of the project is to ensure that the pasture, agricultural, forest and other terrestrial land uses of Mongolia are sustainable productive systems that maintain ecosystem productivity and ecological functions while contributing directly to the environmental, economic and social well-being of the country.

1.1.2 Project Objective

The objective of the project is to strengthen the enabling environment for sustainable land management by building capacities in appropriate government institutions and user groups and demonstrating good practice in SLM through on-the-ground interventions that are integrated with national economic and social development policies.

1.1.3 Project Outcomes

- Strengthened coordination mechanisms, institutional and human resources capacity and knowledge base to promote SLM and desertification control.

- SLM mainstreamed into national, provincial and local policies, strategies and regulatory framework; and

- Pilot testing, demonstrations and scaling-up community based approaches in integrated natural resources management with focus on grassland and water management and sylvopastoralism

In addition to analyzing and rating the project objectives, activities and recommendations from the mid-term report, the TE specifically looked into the following questions as per the terms of reference.

1. Did the project achieve the targets set out in the logical framework?
2. To which extent did the project contribute to the objective?
3. To which extent are the structures that have been supported by the project expected to endure after the project ends?
4. What was the progress made in policy development of sustainable land management and community based natural resource management?
5. How did the attitude towards desertification and land degradation change between the start and the end of the project?
6. How did key species develop since the project started?

2. Approach and Methodology

The Terminal Evaluation team (TE) met with a number of Ulaanbaatar based stakeholders, held participatory workshops with field coordinators, local government personnel and community members and visited project target sites and the Center for Desertification Studies research center.

2.1 Meetings with Key Stakeholders

The TE team with support of the project office staff (PIU) held face to face meetings with key informant stakeholders in Ulaanbaatar Capital City with the Ministries of Environment and Green Development ME&GD (formerly the Ministry for Nature, Environment and Tourism (MNET), the National Committee for Combating Desertification (NCCD), as well as the Ministry for Industry and Agriculture (formerly the Ministry of Food, Agriculture and Light Industry (MoFALI), two of the Government of Mongolia (GoM) partners in the project. Meetings were also held with key personnel in the government agencies of the Administration of Land Affairs, Geodesy and Cartography (ALAGaC), and the Institute for Geo-Ecology (IGE) and the Center for Desertification Studies (CDS). The TE team also met with leading academics in sustainable land management in the National University of Mongolia (NUM) and the Mongolian State University of Agriculture (MSUA).

Meetings were also held with personnel in the Coping with Desertification Project (CODEP) and the Swiss Development Cooperation Agency (SDC), CODEP is funded by the SDC. A full list of meetings is listed in the **annexes VIII**.

2.2 Meeting with Project Officers

The TE team met with project officers to work out logistics for the field travel and arrange meetings with key stakeholders and to hear their views on the project and progress of the work over the past five years. This was helpful in gaining a quick insight in to what the project activities have achieved and where target sites and other areas of interest the TE team wanted to visit.

2.3 Document Review

The PIU provided the TE team with numerous documents to help with the desk review of project activities and progress and to give the TE team an understanding of project work over the past five years. A full listing of provided documents is listed in the **annex IX** section of this report. A few of the documents reviewed were the annual and semi-annual reports that laid out project activities over a six month period, as well the project document containing the log frame and project goal, objective, outcomes, outputs and targets. Other documents consisted of training reports and assessments, the social and

geophysical survey by Eco-Asia, the National Action Plan for Combating Desertification in Mongolia, the Law on Land, as well as an unofficial draft translation of the new law on soil protection and combating desertification.

2.4 Field Workshops Local Coordinators, Local Gov't/Land Officers, Community Leaders

The TE team, with project logistical support, held two 'one day' workshops to hear from project target area field coordinators, soum land and environmental officers and community leaders. The workshops were undertaken during the field trips to visit target areas soums and hear from a wide group of project beneficiaries in a participatory process. The first workshop was held in Tuvshinshiree soum center in Sukhbaatar aimag on 25 November with participants from six project target soums from both Dornogobi and Sukhbaatar aimags. The second workshop was held in Arvaikheer, the Uvurkhangai aimag center on 29 November, with participants from seven soums from Tov and Uvurkhangai aimags. Three people from each of the 13 project target soums attended both workshops.

These workshops gave project beneficiaries a venue to talk with the TE team and make presentations of their work and accomplishments with the project over the past five years. Working sessions were undertaken during the workshop with the participants, asking them to think and discuss more deeply about the following three questions and present their findings back to the workshop participants and TE team.

1) What were the lessons learned from the project?;

2) What are the planned activities for combating desertification for the next 3 to 6 months?, and;

3) How will local governments and target communities sustain the activities after project funds and work ceases?

It was important to hear from beneficiaries themselves how they plan to sustain project activities long after the project finishes and can no longer support with funds or training. The workshop charts are listed in the annexes X of this report.

2.5 Field visits to Community Target Sites and Research Station

A 10 day field visit to selected project targets sites and the CDS research area in Bulgan aimag was undertaken between 23 November and 02 December 2012 to see on the ground project activities and talk with local field coordinators, local beneficiaries of the soum governments and communities. The field visit was undertaken at the beginning of winter and all precautions were taken to ensure safe travel during this time of year.

2.5.1 Field Site Visit and Travel

23 November to 26 November – Sukhbaatar (Tuvshinshiree and Uulbayan soums)

The TE team was accompanied by the project manager and visited two soums in Sukhbaatar aimag of the project area, Tuvshinshiree soum and Uulbayan soum.

The first stop on 23 Nov., was to meet with the Tuvshishiree soum project field coordinator and to view a rehabilitated spring and wetland where community members had cleared numerous tons of sand, dug out the spring and built a series of stone nets around the spring area to halt sand movement. Prior to the project, the Altan Bulag spring had disappeared under windblown sand and was of no use, grassland around the spring had been heavily grazed with the soil showing signs of serious degradation. The spring now has several hectares of fenced area surrounding it with a variety of steppe grasses and herbs inside showing good growth when protected and not grazed by livestock. Grass is now covering a large percentage of ground cover helping to maintain moisture in the soil and add to the spring's rehabilitation. This is then used as a haymaking area for the local community. Even though it was winter, the spring was still flowing, showing that ground water is still plentiful at this time of year. The spring is protected and watched over by the local monks at the nearby Dophal Monastery.

On 24 Nov., the TE team visited the local soum environmental and land officers in the soum administration office, inspected a project supported felt making operation and talked with the soum school director about the eco-school program.

The soum land and environmental officers reported on the numerous trainings given by the project and how this has helped them with developing the annual land management planning required each year. Both the land and environmental officers stated that they have been working with the project soum coordinator as a team and view the project as instrumental in helping them to perform their duties in a much more efficient manner. Through the trainings they have a much better understanding and now practical hands on experience with land planning, combating desertification techniques in tree planting for windbreaks, creating stone nets to curtail sand movement, rehabilitating springs and hand wells, traditional rotational grazing practices, fencing to protect haymaking areas and protect water sources and advising local communities and herders about these types of techniques.

The TE team visited a felt making operation in the soum center run by the Bayan Sharga Herding Group. This is a group of five formerly very poor households who had little prospects for financial income. Through the project they have undertaken a number of trainings for milk products; wool felt making and other income generation topics. This group now focuses on making wool felt products with the help of wool combing machines provide by the project. The Bayan Sharga herding group now makes and sells

felt covers for "gers" the traditional mobile house commonly found throughout Mongolia used by herders along with other smaller felt products and clothing items. According to the community members present, this has brought the formerly very poor households a cash income they did not have before, affording enough money to spend on food items, medicines, school fees and clothing for their children and other household needs.

The Tuvshinshiree Soum School was visited by the TE team and held a meeting with the project field coordinator and the school director. Although students were off for the weekend, there was clear evidence that many activities with students have taken place with project supported eco-school and eco-club events. The project coordinators have played a major role in helping these eco-schools form. Each class has an eco-student advisor chosen from the students themselves. There are also a group of interested teachers who have been trained to promote and organize eco-school activities among the students and soum center community. Clean up days, planting trees and shrubs around the soum, while learning about combating desertification and SLM are among some of the activities the eco-school students organize and take part in.

2.5.2 Travel to Uulbayan soum center and Esun Gal Herder group

The TE team traveled to Uulbayan soum center east of Tuvshinshiree soum, another project target soum, to see the activities of the Zuun Bayan herder group in the soum center. A group of 11 households. The community had rehabilitated an enclosure (former naadam stadium) that had filled with blowing sand and long abandoned. With training and other support from the project, and with a project supported tractor, the community removed 70 tons of sand, planted fruit trees and vegetables and enlarged the area further with fencing to expand their operation. They now sell fruits and vegetables to the soum school and hospital bringing additional income to each participating household.

From here, the TE team moved to the Esun Gal herder group area further east of the soum center. This is a herder group of 9 households. With project training and support they have fenced a large area for fruit trees and vegetable growing, constructed a green house and root cellar and rehabilitated a deep well. More on this group below.

On 25 November, the field workshop took place in the Tuvshinshiree soum center and the TE team returned to UB on the 26th.

28 November to 01 December – Uvurkhangai Aimag (Arvaikheer and Baruunbayan Ulaan Soum)

The CDS Elsen Tasarhai research station in Ranshaant soum, Bulgan aimag was visited on 28 November with two researchers from the CDS itself. With project support, the CDS has been able to research and promote desertification mitigation practices and gain a better scientific understanding of desertification processes and possible further actions to

stop these processes. The new research station building facility supported with project funds is being used for education and outreach purposes and to engage the public in raising awareness of the issues. The research station itself is located just off the main east/west tarmac road purposely to allow easy access for public awareness and education.

A second field workshop was held on 29 November in Arvaikheer, the aimag center for Uvurkhangai aimag. Project field coordinators, soum land or environmental officers and communities leaders from the remaining 7 target soums in Tov and Uvurkhangai aimags attended. Presentations by each soum were made followed by a working session designed to get feedback from the participants, the project beneficiaries, on lessons learned, future activities and sustainability of activities after the project ceases on 30 December 2012.

Following the workshop in Arvaikheer, the TE team accompanied by the Baruunbayan Ulaan soum project coordinator as well as Tumurchuder, the community leader for the Bayan Dukhum Uguuj herder cooperative and Damshigbazar, a community representative to the soum citizens representative khural, traveled to Baruunbayan Ulaan soum center with stops along the way to view sites where the project had supported herder community actions.

Khunkhreegiin Burj spring is a fenced area and hay area now cleared of sand and protected. It was evident even in early winter that the spring is still flowing with water and showing that grass growth was good for the summer. Enough hay is now grown to provide each herder household livestock with winter fodder, as well as sell some hay for community income. In 2011 the aimag governor visited the site where a day for training was taking place with more than 100 people from the aimag center and surrounding region taking part, with the governor recognizing the effort as important in combating land degradation, desertification and livelihood improvement.

A visit to the soum center itself toured the saxaul nursery operated by the Taats herding group and Altan Nug Cooperative. Trained by the CDS, these groups grow saxaul seedlings in plastic tube pots and then transferred to the ground after two years of growth. This is in its third year of operation and providing seedlings to be planted in the spring. The fenced area with saxaul bushes will be expanded to allow for more growth and bushes to collect saxaul seeds and expand the areas of saxaul forest. Photo of saxaul nursery with tube seedlings can be seen in the annexes.

The Baruunbayan Ulaan school was visited during this leg of the trip, where the TE team had the opportunity to hear from eco-school students, teachers and the school director. A ceremony was taking place at the time of the visit to award the best practices and individuals, both students and teachers in the eco-school program for 2012. The school director indicated that the eco-school program was enthusiastically received by both students and their parents. As a trained biology teacher, she played a leading role in the

program and has now taken steps to integrate the eco-school environmental classes into the school curriculum for all students making it a permanent and required part of student education.

From Baruunbayan Ulaan soum center, the TE team traveled north to the Bayan Dukhum Uguuj herder cooperative along the Taatsiin gol or Taats River. Tumurchudur the community leader gave a tour of the area. A detailed account of this cooperative can be found in section 5, “best practices” of this report.

3. Mid-Term Review Recommendations

The Mid-Term Review which took place between June 14 and August 20, 2010 made a number of recommendations for the project to consider and act upon. The TE team looked at these recommendations and in talks with stakeholders in Ulaanbaatar, at the field workshops and target sites, investigated as to how some of these recommendations had been put into practice.

3.1 Adaptive planning

The planning process is strongly pre-determined by the original project document, which makes it difficult to adapt to new needs and concerns that emerge during the course of the project. Therefore, it is recommended to explore ways to obtain a more adaptive management process for the project.

The UNDP "Sustainable Management for Combating Desertification" Project and the SDC funded CODEP project worked together creating synergies between project management and activities. The projects met on a regular basis every three months and reviewed project activities for the past quarter, looked at changes that may be necessary and planned for the upcoming quarter with the idea of adapting to any changes recommended or required to ensure project success. In this way they cooperated on planning and implementation using adaptive management approaches. This recommendation of the MTR was put into action with the results being better management and the project reacting to needs on the ground.

3.2 Environmental impact assessment

The overall understanding of ecological capacity of the landscape and the environmental impact of project activities is limited and requires more attention. Increased training of project staff and establishment of a format for environmental impacts assessment (EIA) of project activities (and possible outscaling) is needed.

In meetings with Soum land and environmental officers and at the field workshop the TE team learned that the project has provided numerous trainings for land use planning. These also incorporated EIA skills and the use of arc/GIS computer program software. The use of these programs in making annual land use maps gives the land and environmental officers, skills and the capability to make environmental impact assessments. Through these trainings they learned how to connect with the National Land Data base and the specialists at ALACGaC and get specialist input to their land use planning.

3.3 Community organizations

To avoid disappointments in collective action, it is necessary that before the end of the project community organizations will have sufficient organizational, technical and environmental capacity so they can stand by themselves and deal with (expected) challenges.

In 2011 the project focused on strengthening community institutions with a number of activities. Leadership training for community leaders was seen as key to sustainability. "Herder Group Management and the Role of the Herder Group Leader" was provided where both men and women community leaders took part. The TE team talked with one 60 year old herder cooperative leader in Baruunbayan Ulaan soum who was inspired enough by the project to enroll in a university BSc course in Cooperative Management" in Ulaanbaatar. Soum land and environmental officers also relayed that with project support further training was given to improve their knowledge of ARC/GPS, computer land management programs and practical land management planning. They now feel they have the training and the tools to do proper annual land use planning as required by law in Mongolia and make use of the National Land Database located in ALACGaC.

3.4 Youth involvement

Develop a set of measures to more actively involve youth in project activities. This will require a different communication strategy, as youth are not attracted by the same methods and approaches as the older population.

The project adapted from CODEP the idea of the eco-school program to deliver better environmental education to youth in the 13 soum target areas. A joint 3 day training experience supported by the project was given by the Ecological Center of NUM and Nature and Environmental Consortium and laid out steps to organize an eco-school program. The seminar taught among other items, how to develop green communications, plan eco activities with students and how to change behavior of youth towards the environment. Three "best practice" eco-schools were visited in Ulaanbaatar. Attendees included school directors, biology teachers and social workers. This MTR recommendation was put into practice throughout the project soum target areas. The TE team visited with two of the eco-schools and took part in an eco-school activity during the field trip, which included most of the students of the Baruunbayan Ulaan soum school. It is reported by the school directors in the project target soum schools that other soums outside the project target areas are interested and inquiring as to how to begin eco-school programs of their own. The idea is seeing a multiplier effect and having an impact on the environmental education of youth both in and outside of the project areas.

3.5 Human resources & training

As experience is gained and the institutional environment changes during the project, there is a need to improve and update the capacity of staff at all levels of the project. Training of staff shall be seen as a necessary capacity building, which will benefit Mongolia also after the project has come to an end. The key group that requires frequent training is the local Soum coordinators, who often work in isolated areas and who are in need of support, mentoring and training. The capacity of local Soum authorities should also be improved so that they can efficiently coordinate natural resource management activities. During the training of herders/farmers, the economic, ecological and social dimensions of the technologies should cover as well.

*According to the presentations made by local soum coordinators, land and environmental officers and community leaders at the two field workshops conducted by the TE team, there were numerous trainings provided by the project at the local soum and community level. Project documents show that **74** different trainings took place over the project lifetime with **8506** total participants (see **annex VI**) for a full listing of the range and scope of trainings that took place). Training in annual land management planning, creating productive hay and fodder areas with fencing, milk and felt product trainings, vegetable growing and canning vegetables and fruit for home use and for sale, as well as, leadership training for community leaders and field coordinators. Trainings in natural resource management with local protected area management planning, tree planting for windbreaks, saxual rehabilitation, rebuilding hand wells and rehabilitating springs was also a large part of the project. Throughout all of these trainings, soum officers and project field coordinators trained alongside herder and forest user group members. The training program appears to have been fairly comprehensive in its scope of "on the ground" and "on site" training that will make a difference at the local and herder group level.*

3.6 Use education system for mutual benefits

The project deals to a large extent with capacity development and learning processes. Learning is a lifelong process but builds on the same mechanisms whatever age you are. A closer cooperation with the formal education system in the project area could therefore lead to mutual benefits. The project could achieve improved reach-out and benefit from pedagogical improvements, while topics can be introduced to the schools which are relevant for the students.

The two target soum schools the TE team visited, Tuvshinshiree, in Sukhbaatar amaig and Baruunbayan Ulaan in Uvurkhangai aimag both had active and vigorous eco-

schools activities on-going. Talks with both school directors and teachers indicated that environmental curriculums are now being mainstreamed into the normal school curriculum. The eco-school program has affected this aspect of the educational system in the project target areas. Teachers also indicated that parents of students involved in the eco-school programs are also becoming more educated about and interested in environmental protection and combating desertification through their children. This is also an effect the project is having on the greater soum community with environmental awareness, information and education spreading beyond the school and into the adult population. All 13 target soums have eco-school and eco-club programs now underway. Combined with the CODEP project, the total is 69 eco-schools across the country.

3.7 Communication strategy

As the project deals with complex livelihood and sustainability issues, it requires cross-sector approaches. The project is supposed to have impact on different levels of the Mongolian society: at Ministry and policy levels, at Soum level, and with the local herders and farmers. This also means that communication needs to be differentiated depending on the target groups. A strategy for more effective reach-out is required. It is recommended that this is done in close cooperation with CODEP and other related projects in order to build common lessons and success stories.

Public awareness, information and education about natural resources, their protection and management is still under utilized by many programs as an effective communications tool that can reach a wide audience. However, the SLM project has been good at using a number of communication tools targeted at different levels to disseminate and advance the issues of livelihood and sustainability issues. Working with other stakeholders and partners such as the MNET, MoFALI, CODEP and the Korea-Mongolia Greenbelt project, the World Day on Combating Drought and Desertification made use of press conferences, public awareness actions, leaflet distribution, photo contests, TV and radio programs discussing these issues. This has been an annual exercise of the project. Joint press conferences specifically discussed desertification trends, the updated NAP on Desertification, how individuals contribute to combating desertification, and best practices of the project and future activities. The Project has made good use of all aspects of the media to communicate its activities to the public, in particular the radio program "livestock husbandry tomorrow" broadcast a number of programs nationally on pasture management, scaling up local desertification mitigation activities and information on relevant laws. The project regularly published articles in the "Agriculture Tomorrow" newspaper on a number of topics dealing with land and pasture management, desertification, tree planting, saxaul rehabilitation and more. The newspaper is widely distributed in aimags and soums, as well as within the MNET, MoFALI and National

Agriculture Extension Centers. As part of the "World Day on Combating Drought and Desertification" and in a joint effort with its partner stakeholders, a photo contest highlighting desertification run every year to give the issue a visual format and educate the public through pictures. Using these various forms of media communication has been affective.

3.8 Exit strategy

The project is coming to an end in 2012 and the overall purpose of the project is to reach sustained impact. To reach that, there is need to build an exit strategy based on the experiences gained so far. The earlier this process is started, the more likely that the results and lessons learned will be sustained and mainstreamed. The lessons learned needs to be transferred into mechanisms that can remain viable also after 2012.

In talks with the project staff, field coordinators, soum administration officials and community leaders and personnel, it was learned that since the MTR numerous trainings have taken place to strengthen soum and community institutions and the personnel responsible for them. Leadership trainings, management planning and other on the ground training for resource management were regular features of project activities. The eco-school program has brought this aspect to students and in turn to their parents, further educating the public about their role and responsibilities in sustainable land management and combating desertification. Herder communities have also learned of new financial mechanisms for sustaining their activities after the project ends with an understanding of the new budget law and its provisions for funding local environmental initiatives. Through public media and seminars with government ministries the project has had influence on policy and legislation. The project worked closely with the MIA to draft a pasture management law that now sits with Parliament and awaiting discussion and approval. The new Law on Soil Protection and Combating Desertification is a valuable tool that communities and local administrations can use to give legal backing for their actions and requests. Local soum officers, herder and forest user groups that the TE team talked with either individually or heard from during the field workshops, were well aware of these new legal mechanisms designed to help them carry on SLM activities.

In addition and in line with the UNDP National Execution Manual (NEX) the project developed and created a draft exit strategy and outline that was circulated to all major stakeholders for review and comment. The comments were incorporated into the draft. This established a number of actions, many of which have already taken place, with recommendations for ministries, government agencies, aimag, soum and local communities on institutionalizing and replicating best practices for sustainable land management developed through the project and who the responsible parties should be.

The exit strategy looked at each outcomes/output, and then the beneficiary organization, the capacity built through the project to date, the carry over date, or when the recommended activity should take place and the further strategy and obligations of the beneficiary organizations involved. The draft exit strategy can be found in ***annex XI***.

4. Project Management

4.1 Implementation approach and efficiency- ***Highly Satisfactory***

The project management unit followed UNDP procedures in reporting and carrying project planning and implementation activities in accordance with the project logical framework. Implementation of project actions, trainings, seminars and support for policy development, publications and working with government agencies at both the national and local levels was timely and remained close to schedule for the duration of the project timeframe. This was due in large part to the professionalism of the PIU and its personnel management. The TE team has been impressed with the level of work the PIU has been able to carry out over the five years of the project and adapt to on the ground needs as necessary. The PIU appears to have been very responsive to project stakeholders and acted quickly to consider and take measures to respond to the Mid-Term Report recommendations.

4.2 Financial Planning- ***Satisfactory***

The semi-annual reports throughout the project include the financial report and liquidity plan for each reporting period. Going over the financial reports and viewing expenditures for project activities and support, it's clear the project finances were allocated in accordance with project needs and well accounted for. The financial planning of the PIU is supported with documentation and reports showing how project finances were spent and in which project period they were spent in. There remains a small amount in the project budget yet to be spent, but activities for this funding are being identified and will be allocated.

4.3 Cost Effectiveness – ***Satisfactory***

The project management appears to have been run very professionally. Support for national level policy and public awareness activities have been successful in hitting their targets. Support for trainings, academic studies and exchanges for national agencies like the Center for Desertification Studies has successfully accomplished the task in a cost efficient manner. The project target area trainings, exchanges and on the ground support for local soum coordinators, soum land management officials, eco-schools and herder groups has also been done in a cost efficient manner. The TE team saw no indication of financial waste or energy put into activities such as trainings or land rehabilitation that did not promote the project objective in a positive way.

4.4 Monitoring and Evaluation – ***Highly Satisfactory***

Along with its project partner and stakeholder, the SDC CODEP project, the SLM PIU met every three months to review the past quarter, discuss what worked or didn't work,

make the necessary changes and adapt its actions for the next project quarter. This was adaptive management in action through this monitoring and evaluation exercise. The project also undertook a Mid-Term Review between July and August 2010 to evaluate project progress. From this report a number of recommendations were made which the PIU took steps to address. From the semi-annual report, the quarterly monitoring and evaluation meetings to the MTR, it is clear the SLM undertook regular and ongoing monitoring and evaluation exercises and practiced adaptive management methods to address these.

4.5 Project Relevance

4.5.1 National and Local Government Policy- ***Highly Satisfactory***

With desertification widespread throughout Mongolia and growing, the GoM has taken numerous steps to determine its causes and explore methods by which it can be reversed. The creation of the National Committee to Combat Desertification is indicative of just how serious they take the issue. The NCCD is headed by the Minister for Environment and Green Development with the State Secretary's of nine other ministries as well as the head of the National Emergency Management Agency (NEMA) members. Other important organizations are also members. (see full list in **annexes XII**). The National Action Plan for Combating Desertification was revised and approved by government, and the new Law of Mongolia on Soil Conservation and Desertification Control will go into effect at the beginning of 2013. The SLM project has played an important role in supporting these efforts at combating desertification and is highly relevant to national and local government policy on the issue.

4.5.2 Donor Agencies – ***Highly Satisfactory***

The Swiss Development Cooperation (SDC) has been supporting the Coping with Desertification Project (CODEP) concurrently with the UNDP/SLM project. Both projects are addressing the issue of land degradation and desertification and work together supporting activities in this area. They share common goals in this effort. The SLM project has also built on previous efforts by other donor agencies like GTZ who have had earlier projects that addressed desertification in the Gobi area and have left a body of knowledge to take advantage of. The UNDP/SLM project goal and objective is relevant to what other donor agencies are working toward and filling a gap that the GoM has requested be filled.

4.5.3 Beneficiaries (local ownership) – ***Satisfactory***

At the local level, the SLM Project is highly relevant to the communities who depend on their natural surroundings for survival. The effects of desertification are very real to people who are suffering from loss of grasslands, springs and wells drying up and sand

movement covering once vibrant landscapes. Local soum governments and land officers also find the training and support the SLM project provided, highly relevant to the work they are mandated to undertake by law. The eco-school program was taken up enthusiastically by the soum schools in the target areas and is now being replicated by other nearby soums. Environmental curriculums are being added to the regular classes. This is the schools taking ownership of the program and making it part of their normal teaching efforts.

4.5.4 Stakeholder Participation/Public Involvement- ***Highly Satisfactory***

Stakeholder participation and public involvement has been part of the project design from the beginning. The TE team observed during the field workshops that project coordinators, soum land officers and community leaders were well versed in the use of participatory practices. It was evident that stakeholder involvement with project activities was high. Visits with local target herder groups and local soum administrations also showed that people who undertook trainings were used to working in a participatory way. Project soum coordinators all underwent trainings to become familiar with and use participatory facilitation in their work at the local level.

The SLM project also involved the public in events like the "World Day to Combat Drought and Desertification", as well as supporting radio programs that has national reach, TV programs and news articles. Involving the public in events and by informing them via media of the projects activities and desertification issues.

4.6 Sustainability – ***Satisfactory***

The project has put a lot of effort in ensuring that the right training and support has reached the right people. Project efforts in the academic institutions and schools appears to be very solid and with curriculums including SLM and environmental courses and post-graduate degrees created for SLM, the continuation of the SLM effort in this area is quite positive. The same applies to the government agencies like AlAGaC and CDS. Support for these agencies has built capacity that will continue and grow after the project is complete. With the strengthening of the NCCD, the revision of the NAP for Combating Desertification and the new Law of Mongolia on Soil Conservation and Desertification Control, government policy is in place to ensure the enabling framework for combating land degradation continues. Although there is no approved law on pasture management as yet, the project worked extensively with the MIA on developing the most recent version of this draft law that now sits with Parliament and is in discussion. If and when a pasture law is approved, it will add considerably to pasture management and its regulation.

At the local soum government level, capacity building for land management officers, environmental inspectors, pasture management officers, bag governors, volunteer rangers for local protected areas, and herder group leaders was extensive. This was made clear from the field workshop presentations, talking with individuals and from the project documents and reports (see **annex VI**) for a full list of trainings provided and the participant numbers). Training in land use planning, pasture management, local protected area management planning, environmental protection and other aspects of land use has left in place a number of resource persons to carry on with sustainable land management practices and to disseminate information and advise local herder and forest user groups on this issue.

The PIU has put a lot of effort into herder group formation, providing numerous trainings and material support. Items like tractors and green houses to help with vegetable growing and wells to provide water for households and livestock. Despite inactivity by some of the herder groups, the prospects look good that many of the herder groups will continue to work together and possibly grow. The project has worked with herder groups in helping them understand the new budget law and how they can access this for needed funding for ongoing conservation activities. Field coordinators are helping to form soum NGO's to fill the gap they now fill to help with herder group advocacy. These will have to be monitored to see how this works. The GoM will also substantially increase soum budgets in 2013 from funds obtained from the recent mining revenues.

In addition, the project has helped with the establishment of a soum "co-management committees" in the target soums which are made up of nine members each, including the project soum coordinator, herders, soum authorities and khural representatives. The co-management committee will give a united voice to local government to address pasture management issues, land degradation and combating desertification. Project support was also given to the creation of a "Sustainable Land Management Fund" to support activities implemented by herders. The fund will be managed by the co-management committee. This is a funding mechanism that creates an opportunity for herder groups, soum land management officers and other interested herders to access funds for their own initiatives with environmental protection, pasture management, livelihood improvements and to sustain their ongoing herding activities. The project supported the fund with 4,000,000 MNT seed money. 75% of the fund will be available for herder group proposals, 20% available for land management officer proposals and 5% available for other interested herders.

Each herder group was also trained in developing their own "revolving fund" with their own financial resources and how to manage them. Each household contributes to the fund an amount agreed by the community that is within their means. The funds are then used for community activities for the community as a whole. Any products or produce made or grown by the community and then sold returns an agreed amount to the individuals and

an agreed amount to the community revolving fund. In this way communities have increased their revolving fund substantially, improving their viability and sustainability. An example would be in Uyanga soum, Uvurkhangai amaig, where "*herder groups and forest user groups, namely 'Takhilgat Khairkhan, 'Ar Ult' and 'Buural Khairkhan', have accumulated MNT 1,200,000, MNT 850 000 and MNT 950,000, respectively, in their revolving fund for the recent one year. They plan to spend some of the accumulation on preparing animal fodder and hay, and buying vegetable seeds."*

However, there is concern for the sustainability of all the herder groups and forest user groups involved. Can all of these continue with their activities for income generation and combating desertification after the project ceases? According to project documents, nine herder groups have become "inactive" for various reasons that include being too isolated from each other as well as households or individuals being drawn away from the group by artisanal mining opportunities. Herder groups are made up of people and people change, and like anywhere, they take up other opportunities and move on when opportunity arises. There is evidence gained from current and former projects that herder groups are dynamic in their makeup. Groups can wane for some time and self rejuvenate when individuals or households return. This has been the experience with communities in the former GTZ project in the south gobi and with the Snow Leopard Conservation Foundation herder communities in Gurvantes soum in Bayanhongor aimag and their other project areas.

4.7 Replication Approach – ***Satisfactory***

As mentioned numerous times in this report, the project has supported many training's for herder communities, local soum land officers, soum coordinators, and government land agency and ministry personnel. This was confirmed in the semi-annual reports and through conversations with stakeholders at all levels and in the field workshop presentations. The project has also supported research and academic efforts with SLM from soum schools to Ph.D. Many publications about SLM and a text book have been produced for university level courses. The approach to combating land degradation and desertification using participatory practices is well documented. Many if not all of the "on the ground" activities are replicable by other projects, or more importantly by local herders and soums themselves.

Herder group exchanges and experience sharing were undertaken throughout the project lifetime to share ideas and promote sustainability with both target and non target herder groups. In the second half of 201l alone, there were 8 such exchanges involving 380 participants. These exchanges discussed and trained other herders in project interventions that included such issues as:

- best practices in pasture rest and rotation,
- establishing windbreaks and sylvopastures,

- saxual rehabilitation through tube seeding,
- locally protected area management,
- larch tree planting through seeds,
- establishing mechanical barriers to cope with sand movement,
- additional income generation and livelihood improvement which addressed fodder and vegetable planting and small scale unit to produce milk products, as well as
- best practices of Forest User Groups (FUGs), on management of forest resources.

These exchanges helped promote replication of project interventions and best practices into non target herders and soums and provided examples of collaborative action in combating desertification, better pasture and forest management and improving livelihoods.

4.8 Project Effectiveness (based on Outcomes)

Outcome 1: Strengthened coordination mechanisms, institutional and human resources capacity, and knowledge base to promote SLM and desertification control. *Highly Satisfactory*.

Output 1.1: Coordination and monitoring capacity of the National Committee for Combating Desertification (NCCD) strengthened with regard to UNCCD-NAP and SLM. [This output is achieved jointly with the SDC/GoM Project on Coping with Desertification in Mongolia].

Satisfactory **-** *The NCCD was successfully supported and strengthened under this project. The NCCD is now made up of members from 11 different ministries as well as the NEMA, and the Academy of Sciences and other important and relevant government agencies. The head of the NCCD is now the Minister for the ME&GD. The NCCD secretary was supported by the project for training Bangkok, Thailand to upgrade and improve the NAPCD within the framework of the UNCCD.*

Output 1.2: Human resources capacity of aimag, and soum and bag level officers strengthened in SLM and desertification control and herder community leaders and young herders trained in indigenous and new knowledge in grassland management and pastoralism.

Satisfactory **-** *In meetings with soum land officers and community leaders, through the field workshops with project coordinators, soum and community leaders from all 13 target areas and visits to target sites, and from reports of project trainings and the socio-economic and geophysical survey report, the TE team is confident that the knowledge and capacity to control desertification has been strengthened. Field visits to project target*

sites confirmed actions on the ground with pasture management, rotational grazing, spring rehabilitation, tree planting for windbreaks and mechanical structures built for preventing sand movement.

Output 1.3: Capacity of government institutions strengthened to plan their own institutional capacity development in SLM and desertification control.

Highly Satisfactory *- With project support and in cooperation with CODEP, 28 government agency resource persons were trained in China on the use of LADA in assessing and planning for desertification control. Individuals from MoFALI, ME&GD, CDS, ALAGaC, AMHEM, IG, RIAH, MUSA, MSRM, CODEP and the project unit attended this training and learned about land degradation and control practices in China, the objectives methods and outputs of LADA, mapping of land use systems at national dimension for LADA, national land degradation assessment, framework, tools and approaches of local level land degradation assessment, and other tools for planning and controlling desertification. In meetings, presentations and talks with personnel in ALAGaC and the CDS, and evidence on the ground in the target areas, the TE team is confident that capacity in this area has been strengthened.*

Output 1.4: Courses on SLM at B.Sc. degree level offered in the Mongolian National University and Agricultural University. Curriculum developed and implemented in the two institutions for 2 academic years.

Highly Satisfactory *- With project support, courses for undergraduates in sustainable land management are now being taught at both the State University of Agriculture and the National University of Mongolia at the basic level, giving undergraduates an understanding of land degradation and desertification and methods on how to reverse this situation to better manage the landscape. These courses have been taught for the past 3 years and are now well established.*

Output 1.5: Center of Desertification Study strengthened with particular focus on research and outreach in SLM and desertification control, with specific reference to (a) water harvesting, (b) land degradation assessment, (c) sylvopastoralism, and (d) windbreak systems.

Highly Satisfactory *- With support from both the SLM project and CODEP, the CDS has expanded and improved SLM and desertification control research in water harvesting, land degradation assessment, sylvopatoralism and windbreak systems at their Elsen Tasarhai research center in Rashaant soum, Bulgan aimag. Besides providing trainings*

for these activities, the CDS website also provided information to the public on these topics. Personnel from CDS were also trained in LADA methodology in China.

Outcome 2: SLM mainstreamed into national, provincial and local policies, strategies and regulatory framework. *Satisfactory.*

Output 2.1: The Pastureland Law, Land Law and associated environmental legislation are mainstreamed into Aimag, Soum, Bag and community level planning and programming processes with special reference to land use planning and co-management of natural resources.

Satisfactory **–** *The project PIU worked closely with the MIA and the ME&GD on a package of* ***enabling legislation and policy*** *that inlcuded a "Law on Pasture", the "Law of Mongolia on Soil Conservation and Desertification Control", and the "National Acton Plan for Combating Desertification"(NAPCD). The Law on Pasture is still in discussion in Parliament and is expected to be enacted at any time. This package of laws and action plans for pasture mangement and combating land degradation and desertification was influenced by project actions on the ground and experience gained in the field on SLM measures. The Law of Mongolia on Soil Conservation and Desertification Control is a major step toward reversing land degradation and will add a powerful tool for protecting pasture at the local level.*

Training in land management and desertification control to soum land officers by the project has improved soums and aimags capacity to prepare annual soum land use plans and collaboratively manage natural resources with local herder communties. These plans must be approved by the local soum governor and khural and must be in line with national and regional development policy that will include land laws, the NAPDC the new law on soil conservtion and desertification control and the upcoming law on pasture when approved by Parliament. The field wokshop presentations and meetings with soum land officers and community leaders indicated that these plans are now taking place in the target areas.

Output 2.2: UNCCD NAP up-dated and mainstreamed into national and sectoral planning. [This output is achieved jointly with the SDC/GoM Project on Coping with Desertification in Mongolia].

Highly Satisfactory **-** *With cooperation from CODEP the SLM supported efforts to update the National Action Plan for Combating Desertification. The SLM project supported training for the NCCD national secretary in Bangkok, Thailand in preparation for developing the NAP within the UNCCD framework. The updated NAP was adopted by the GoM in April 2010 and is now the basis and guide for all national action for*

desertification control. This was confirmed by the secretary to NCCP in meetings at the MNE&GD.

Output 2.3: Policy, regulatory framework and tax incentives strengthened to ensure financial sustainability of soum-level land improvement activities, and efficient use and management of community organization funds.

Marginally Satisfactory **-** *The project established pilot activities in five target soums to test funding mechanisms for pasture management. The Sustainable Land Management Fund and the Pasture Improvement Fund will be used to help herders with needed infrastructure or equipment and for pasture use. The project supported the establishment of soum level pasture co-management committees made up of nine members each from herders, local government members, and project coordinator. These committees will play a role in pasture use and management decisions and these new local funding mechanisms. New funding mechanisms at the local level will need to be monitored for some time, at least several years after the project ceases to see if they can be successful. Without project support and guidance this is an activity that needs to be watched.*

Outcome 3: Pilot testing, demonstrations and scaling-up community based approaches in integrated natural resources management with focus on grassland and water management and sylvopastoralism. *Highly Satisfactory*.

Output 3.1: Pilot activities in all 13 soums to develop and scale up effective local institutional framework for participatory planning processes and to implement best practices for co-management of pastureland and other natural resources.

Satisfactory **-** *According to the socio-economic and geophysical survey report conducted by Eco-Asia Environmental Management University, the field workshops and meetings with local soum land officers, project soum coordinators and herder community leaders, the local institutional framework for participatory planning processes has been effectively implemented and carried out throughout all 13 soum target areas. Soum land officers working with herder groups coordinate annual land use planning. The establishment of the Co-management Committees which encompasses local herders and soum government officials was created as a mechanism to work collaboratively on pasture management and desertification control decision making.*

Output 3.2: Pilot activities in all 13 soums on soum-wide land-use planning.

Highly Satisfactory **-** *According to project semi-annual reports, the field workshop and in talks with soum land and environmental officers, local government land use officials*

received training in land use planning in the use of ArcView and mapping along with equipment such as GPS surveying units. Soum land officers have been creating annual land use plans for the past 3 years and now have background and experience to continue using the equipment and techniques they have been trained to use as well as the connections to other information to help with planning provided by ALAGaC or the CDS.

Output 3.3: Pilot activities in all 13 soums on community based approaches in integrated water and pasture management, pasture rehabilitation and fodder production based on local plant species and traditional practices, on local protected area management, and on fuel efficiency.

Satisfactory **-** *The field visits to the target areas in Sukhbaatar and Uvurkhangai aimags confirmed that community based approaches have been implemented for activities around integrated water and pasture management, pasture rehabilitation and fodder production.*
Pasture management and traditional rotational grazing practices have now been agreed to among herders groups and local soum governors and pasture management officers in all 13 soums. Pasture management for herders, local trainers and soum officers was giving with 535 herders being trained and 26 trainers. Each target soum now has trained pasture management personnel as resource persons. Agreed rotational grazing and pasture resting practices were agreed to in all 13 target soums with 487 herders and soum personnel being trained. The project, in cooperation with the MIA, produced a rotational grazing and pasture rest DVD and accompanying guideline booklet to help soum governments and herders better understand this practice and to resource persons for surrounding soums. There are now 961,700 hectares in all target soums under rotational grazing management.

With project support, 4 ***local protected areas*** *(LPA) were established. In the Delgerkhaan and Malgar mountains surrounding Tuvshinshiree soum, Sukhbaatar aimag a LPA of 32.8 hectares was created. In Delgerekh soum of Dornogobi aimag, Tsonjiin Chuluu LPA was established with an area of 18.0 hectares. There is no management plan for this area nor ranger. A local family lives nearby and acts at this LPA's guardians. In Ergan soum, also of Dornogobi aimag, a 37.0 hectare LPA was created in the Argal mountain area. And in Bayan-Unjuul soum of Tov aimag, the Hundagni Arshaan LPA was established. All four soums are working on developing LPA management planning for these areas. None are completed at this point. These areas are rather small in size and would do better for protecting local biological diversity and remain a viable LPA if increased in size by 10 to 20 times and making them anywhere from 200 to 700 hectares. Nevertheless, creating a pilot LPA, making it part of the annual soum land management planning and then managing the area for its stated purpose, i.e.: emergency pasture area, woodland,*

species regeneration, tourism or other purpose, is the first step in developing a LPA system.

The Esun Gal community in Uulbayan Soum, Sukhbaatar aimag has made use of one well to support their vegetable growing area to create enough vegetables for each of their nine households, as well as produce products from seabuckthorn. Their fodder growing area is nearby is fenced and producing winter fodder for livestock. In contrast, the Bayan Dukhum Uguuj herder cooperative in Baruunbayan Ulaan soum, Uvurkhangai in the gobi desert region is growing barley for household consumption and hay along the Taats river as well as vegetables. They have also planted a variety of trees and bushes for windbreaks in a 3 hectare fenced area for vegetable growing.

Five target soums were selected by the project to pilot energy efficiency in building central heating systems with heat only boilers, the GTZ fuel efficient stoves for gers, weatherproofing buildings and gers and using locally obtained material for making fuel briquettes for burning. Bogd, Baruunbayan Ulaan, Uyanga, Zuunbayan Uaan and Bayan Undjuul. 75 people including soum officers, soum heating technicians and herders took part in the energy efficient training. All were trained in making fuel briquettes, a total of 65 soum technicians were trained in installing automatic monitoring instruments on soum building heating boilers for better control of heating systems and fuel burned and 93 fuel efficient ger stoves were given out to pilot test for reduced fuel consumption. Further training for fuel briquettes was delivered in Buren soum, Tov aimag to soum administrative personnel and herders, using locally available materials and the practical operation of the briquette production unit. Participants reported that they reduced their household fuel consumption by 50% using these stoves and using fuel briquettes. Collecting and consumption of saxaul as a fuel source was greatly reduced and lessoning the negative impact on saxaul forests.

Output 3.4: Pilot activities in two Gobi Soums Bogd and Baruun Bayan Ulaan (sub-desert) of Uvurkhangai Aimag, Bayandelger and Uulbayan Soum (desert steppe) in Sukhbaatar Aimag, and Urgun Soum (desert steppe) in Dornogobi Aimag on establishing windbreaks for the protection of infrastructure, plantations, water sources or land under rehabilitation.

Satisfactory *- Pilot activities in establishing windbreaks have taken place in the all four aimags of the project target areas. The field visit confirmed this as well as the field workshop presentations by the soum coordinators. Unurkhuu, the project field coordinator in Urgun soum, Dornogobi aimag stated that in the soum center itself, tamarask, aspen and elm have been planted to create windbreaks. A deep engineered well with a large water storage container were refurbished to supply water. Outside the soum center, the Bayantarsh and Ulziibuyan herder groups have a joint area where they*

have planted mostly seabuckthorn as windbreaks. Water is obtained by a refurbished hand well.

Output 3.5: Pilot projects in "sub-desert zone", in two Gobi Soums (Bogd and Baruun Bayan Ulaan) of Uvurkhangai Aimag on saxaul protection and rehabilitation

Highly Satisfactory **-** *The Taats Herder Group and the Altan Nug Cooperative in Baruunbayan Ulaan soum work jointly to grow and provide saxaul seedlings for saxaul forest regeneration. They now have 16 hectares of saxaul planted from seedlings raised by these groups. They intend to double this area in 2013 and continue to expand the hectares of saxaul further. The TE team visited the site of their saxaul nursery and planting operation, which is in its third year and producing more saxaul bushes using the tube seeding methods learned through the training given by the CDS. The operation seems quite successful and well done and looks to expanding its area and production this next year. The nursery and older bushes they collect the seeds from are protected by a 3 hectare fenced area.*

Output 3.6: Pilot projects in "forest steppe" zone", in two Soums (Uyanga and Dzuun Bayan Ulaan) of Uvurkhangai Aimag on community based approaches in sylvopastoralism

Satisfactory **-** *According to Oyunchimeg, the project soum coordinator in Zuunbayan Ulaan soum, households in the Targel area of the soum were trained and planted seabuckthorn and over 500 current bushes as windbreaks and to collect the fruit for use. These are protected by a fenced area. The households have plans to expand and plant more trees. In the soum center itself and a hand well was re-opened and more than 1500 trees were planted as windbreaks. These are made up of willow, aspen and elm, these and other areas visited in the project target soums have shown that with training and most importantly follow-up care, sylvopatoralism is viable and working in the Gobi area.*

5. Best Practice/examples from target areas

5.1 Esun Gal (Nine Fires) Herder Group – Uulbayan soum, Sukhbaatar Aimag

The Esun Gal herder group is located some 40 kms east of Uulbayan soum center in the treeless rolling hills and open grasslands of the eastern steppe of Mongolia. Prior to the SLM project, they were not organized into herder groups or community groups of any kind. Each household lived individually and cooperated little with other households other than close family members. Other than herding and producing livestock products like curd, meat and wool, families had few other income generating plans or opportunities. Food sources were restricted to livestock products of meat and milk and what few vegetables could be bought in the soum shops. Employment opportunities for cash or salaried incomes are scarce and mostly restricted to local government jobs, schools or clinics in the soum center itself. There were no other major projects working with natural resource or sustainable land management issues in the region addressing the needs of local herders or land degradation. Many of the deep wells and hand wells in the area had either been broken, covered in sand or in too poor a condition to work properly. With overgrazing around many of the natural springs in the area, these too were degraded, covered with sand and in a poor natural state. Desertification was taking hold in areas that were once rich grasslands. Uulbayan soum was chosen as a target site precisely because it suffered from land degradation, growing desertification and the socio-economic situation.

With the start of the project in 2008, herder households in Uulbayan soum were presented with an opportunity to participate in the project and invited with project facilitation, to look at their situation and determine how they could best address the issues of land degradation and improve cash income opportunities and protect the environment on which they depend. As part of project activities and training herder households were told of herder group formation and how cooperative efforts could bring benefits and create new opportunities for them.

As herders themselves, stated and project documents show there were and have been throughout the project lifetime, numerous trainings and activities that have helped herder groups understand how to form, plan and budget for their actions based on their needs and manage their herder communities after the project ceases. The Esun gal herder group took full advantage of what the project and its partners could support them with. Learning how to plant trees and bushes for windbreaks and food (fruit/berries), grow and can vegetables for household use and for sale as well as improve milk products for consumption and sale. As with other groups, the project provided a much needed tractor to help with vegetable cultivation.

The Esun gal herder group now has nine household families working together. One of which was very poor before the project. With project support and expertise, they have

chosen a suitable area easily accessible to all households where they have created a large fenced enclosure. The area is used to grow vegetables, such as potatoes, carrots, cabbages, tomatoes, pumpkins, cucumber, onions and more for all community households. For the past two years, the community grows enough excess potatoes to sell and supply the soum center school and hospital, adding to their herder group fund. They also can cucumber (pickles) and make a surprisingly tasty jam from tomatoes. Seabuckthorn, a dry land bush that produces a berry fruit high in vitamin C has been planted around the area and provides and added source of fruit. Seabuckthorn is also an excellent bush to help prevent sand movement in combating desertification.

The enclosure also holds a large greenhouse where vegetable, such as tomatoes are started and grown. Through the project the herder group also learned how to build a below ground root cellar and properly store vegetables and fruit for later use during the winter months. During the field travel at the end of November when winter is beginning and temperatures are below freezing in Mongolia, the TE team saw this cellar stocked with sacks of potatoes and were treated to a fresh watermelon grown a few months earlier. From the training on canning vegetables the herder group has been able to preserve cucumbers and jams for consumption during winter months. Something they previously did not have. The herder group leader, Chigmed, claimed the food products they are now able to produce, preserve and sell through the project supported trainings have improved their incomes along with their health and wellbeing. They now have access to many more varieties of vegetables and fruits. This year alone they produced 3 tons of potatoes and expect to produce up to 5 tons in 2013.

The perimeter of the enclosure is planted with a variety of trees, such as elm, willow, tamarisk and aspen, as well as seabuckthorn bushes, and provides a windbreak for the vegetable growing area. Before the project and trainings received, Chigmed and others in the community did not believe they could grow trees on the steppe area. They were very skeptical of planting trees with any success but have since learned how to grow from seeds, care for seedlings and plant them when ready. An important lesson according to Chigmed and other community members present, was that they learned trees could not just be planted anywhere, but suitable sites had to be chosen where water sources and below ground moisture are available that would ensure a better rate of success. During the summer months, one family stays close to the community garden to protect it from livestock or other disturbances and to ensure the community food source is not jeopardized.

Additionally, with project support the community refurbished a nearby, deep water well that was in disrepair and use a solar pump to raise water to the surface. This provides water for both livestock and plants.

The Esun gal herder community has also fenced off an even larger area nearby to grow hay, providing fodder or winter livestock use. This will also be shared among the nine households of the herder group. Surrounding these fenced areas for hay and vegetable production, the community has erected off the ground bird nests to encourage raptors to nest close by. In doing so, Chigmed states that the birds of prey stay close and keep down the population of rodents, like Brant's voles, which have played a part in furthering pasture degradation when areas of grassland are overgrazed by larger livestock.

As a herder group that have agreed with the soum authorities and other and planned out a rotational herder scheme. All households in the herder group have signed on to and participate in this to rest grazed pastureland and to maintain the grassland biodiversity of the steppe area. This is an important aspect and one of the most significant steps of the project in reversing pastureland degradation and combating desertification while enhancing biodiversity of the many steppe grass and herb species. As a community, the Esun gal herder group has completely changed their attitude about planting trees and shrubs as windbreaks and to combat desertification and about rotational grazing as a means of pasture management. It is a community that is showing success in cooperative efforts after being involved with the Sustainable Land Management project.

5.2 Altanbulag Spring, Tuvshinshiree Soum, Sukhbaatar Aimag

The Altanbulag Spring is a good example of best practice in spring rehabilitation. Before the project, the area around the spring had been heavily overgrazed and the spring trampled by livestock. Due to overgrazing and loss of grass cover the area around the spring began to cover with blowing sand choking off the spring altogether and stopping any flow of water. This was the situation for some years. With SLM project support, the local community and land officers took part in training on how to rehabilitate springs and wells. Initially a lot of work was put in to remove the tons of sand covering the old spring to get water flowing again. A system of rock nets were then put in place above the spring to prevent sand movement from covering the spring and allow for the growth of grass. A large area of fencing was put around the spring above and slightly uphill of the spring to protect the area from livestock and for hay growing. With this protection, grass began to grow again, taking advantage of the soil which would be slightly higher in moisture content due to the proximity of the spring. With grass cover increasing in density within the fenced area, the moisture content of the soil naturally increases, further nurturing the grass. With soil maintaining is moisture content with a high grass cover and not drying out from exposure to the wind and sun the spring produced more water and is flowing well. It now waters livestock in the area. The TE team visited the spring during late November when winter temperatures were setting in and below freezing. The spring was still flowing, showing that the techniques taught through project support work in rehabilitating water sources.

5.3 Bayan Dukhum Uguuj Herder Cooperative, Baruunbayan Ulaan soum, Uvurkhangai aimag

Baruunbayan Ulaan soum in Uvurkhangai amaig is in the Gobi desert region of Mongolia. It is a diverse desert eco-system encompassing sweeping desert vistas, rocky outcrops and barren rugged mountain ranges, yet contains wetlands, springs, rivers and lakes in stark contrast to the environment around them. Baruunbayan Ulaan soum once contained large areas of saxaul, which is actually a shrub, not a tree, but can grow to a height of 8 meters and have a thick woody trunk. Saxaul forests which are home to a number of desert wildlife have been decimated over the last 20 to 30 years for their cheap resource as a fuel for use in households, soum and bag schools and administration buildings. They are a natural barrier to sand movement and their demise certainly plays a role in desertification.

The Bayan Dukhum Uguuj herder cooperative has been working together for a number of years, and already formed as a herder group before the SLM project began. Initially supported with some activities through a former GTZ project, they registered as a cooperative in 2004. With the start of the UNDP SLM project in 2008, they were given more focused support and began to grow as a herder group. The cooperative contains 15 households and is located approximately 40 kilometers north of the soum center along the Taatsiin gol (Taats River). During the summer months the area is moist and green and able to grow hay for winter fodder. The cooperative has several areas designated and fenced for hay production and each household collects enough for winter fodder for their livestock. According to Tumurchudur, the cooperative leader, they harvest enough hay to sell to other herders outside the cooperative bringing income to the cooperative fund. The TE team viewed some of the stored hay for Tumurchudur's household where several tons of hay were kept.

The land along the Taats River is moist enough to grow barley for human consumption. They are making a number of products from this and have recently sold these at a market fair in Ulaanbaatar. Used as a cereal and in baked goods they are another food item adding to the health of the local population.

At the cooperative community center supported by the project there is a large cement slab working area to thrash the barley and separate the grains from the chaff. This will be expanded in size, as they want to increase their barley production and processing capabilities. Nearby there are fenced areas where the cooperative is growing seabuckthorn, current bushes, elm, willow and aspen trees. The seabuckthorn and current provide fruit high in vitamin C and the trees are used as windbreaks. They also grow potatoes, cabbage, onions, carrots for household use and to sell to the soum school.

The area draining into the Taats river is prone to flooding during times of heavy rain and flash floods in the summer months. Even though this is a desert landscape, this has caused serious problems in the areas where hay and barley are produced along the river's flood plain. Flooding of crops has caused damage and loss of revenue. The ME&DG has stepped in to help with heavy machinery and funding of 150 million tugrigs or approximately $107,000.00 USD, to create diversion ditches to drain water away from the cooperative fodder and barley growing areas. The ministry has recognized the importance of what this cooperative has accomplished and is supporting their efforts with flood control systems.

As in other target soum herder groups, the Bayan Dukhum Uguuj works to an agreed plan of rotational grazing and livestock movement. This is one of the important on the ground activities that the project has accomplished with the many trainings and supported activities to protect pasture and combat against desertification. Overgrazing is the leading cause of desertification in Mongolia. Rotational grazing practices in pasture and livestock management planning will go a long way in reversing land degradation and bringing large areas of pasture back to good health.

The Bayan Dukhum Uguuj herder cooperative is an example of "best practice" in the SLM project target soums. This community is showing positive results from project support and looks to be developing sustainable mechanisms for its continuation.

6. Additional Issues

6.1 Did the project meet its targets?

The National Committee for Combating Desertification is made up of individuals representing a number of government agencies. The project supported their efforts at reporting national plans to the UNCCD. The current minister of ME&GD is now the new head of NCCD, a sign of how serious the minister takes views the topic.

Capacity building plans were developed as per project schedule. The undergraduate courses for SLM were established, as well as post-graduate degrees for SLM at both NUM and the agricultural university. The project has supported five MSc and two Ph.D students in SLM studies. Staff from CDS have been trained in LADA and now implement this in Mongolia. Three CDS staff have been supported in gaining MSc degrees in their respective fields and continue to work on SLM activities.

The Law on Pasture has not been approved as of this report and is still in Parliament. The NAP has been revised and mainstreamed into the national and sector policy and planning framework in 2011.

SLM practices introduced in all 13 soum target sites as per project schedule. There have been good inroads to preventing desertification in all sites by the project, but difficult to calculate by percentage. Progress has been made at all sites.

Public in project areas have a growing awareness of SLM due to the many trainings and public events and activities. Understanding of the issues and how to combat land degradation and desertification is also growing due to project efforts. The Ministry of finance has made substantially increased budget allocations for soums with the help of the mining revenues that are now taking hold in Mongolia. This is now available for 2013. The new budget law also has provisions that allow citizens to access funds for conservation and environmental purposes.

Herder groups have been involved in a number of trainings throughout the project lifetime with grassland and sylvopasture activities. Due to these activities, incomes of poorer households have improved raising bushes and shrubs like currants and seabuckthorn and selling the fruit products derived from these. Other tree seedlings and young trees, like willow, aspen and elm are also grown and sold for income.

Outcome 1

With the support of the project the NCCD was strengthened and supported in its efforts to coordinate combating desertification activities among national stakeholders. The project supported preparation of the National Report to UNCCD by providing a training opportunity to the Secretary of the National Committee to Combat Desertification,

MNET and the Head of the Centre for Desertification Studies in Bangkok, Thailand. The new minister for the ME&GD is now head of the NCCD.

Training modules were developed and delivered to soum coordinators, local land and environmental officers and to herder communities in land management planning, tree planting, rotational grazing, leadership training, and a number of other combating desertification training, such as designing and creating stone nets to prevent sand movement. Trainings were stepped up after the mid-term review and included eco-school program training for teachers and social officer.

Capacity building plans and training took place according schedule throughout the project cycle. Within the CDS and the NCCD as well as local soum administrations on better land management planning and combating desertification practices.

Both the National University of Mongolia and the State University of Agriculture now offer undergraduate courses at the BSc level for sustainable land management and have been doing so for the past two years.

Personnel from CDS undertook exchanges and training in LADA in China and later developed LADA ll in Mongolia. This has now been accepted as official practice by the MNE&GD and agreed by leading experts and institutions in the universities. Numerous trainings and developing in creating windbreaks, water harvesting and slyvopastoralism delivered by CDS along with developing technical guidelines. Outreach through publications and the CDS website are used to disseminate technology transfers.

Outcome 2

There is still no law on pasture as of this report. However all 13 soum land officers have been trained in land use planning and now prepare annual land use plans that are in line with current land and environment laws and soum level pasture use.

The National Action Plan (NAP) revision was finalized in 2011 and put into action in line with national planning on combating desertification

Pilot activities for a sustainable land management fund and pasture improvement fund have been undertaken in five soums as well as a feasibility study for improved re-investment of revenues from land/resource use into local SLM. This will have to be monitored further to see how it is taken up in the long-run and how successful it will be.

Outcome 3

All target area soums trained and implementing actions plans, co-management training given to coordinators and local government officials working with herder groups, documents on all pilot activities and lessons learned are available for public consumption.

Project trained soum and bag governments on land use planning and incorporating into annual planning and approving land use plans. Land use planning policy brief has been developed.

Rotational grazing practices are now being practiced in all 13 target soums. Herders and communities outside of the project areas are beginning to adopt this practice too as they are seeing the real benefits of pasture health from rotational grazing in the project target community areas. This is an important multiplier effect of the project.

Alternative fuel training took place as scheduled developing locally made fuel briquettes. To compliment this, new more fuel efficient stoves were introduced to project areas and distributed by the project. A number of springs underwent rehabilitation with herder community and local land and environmental officer taking part. Fencing erected around the springs, tree planting for wind breaks and stone nets created to prevent sand movement. Local Protected Area (LPA) management planning training took place with LPA management plans being created and implemented by local soum administrations and communities.

Baruunbayan Ulaan and Uul bayan soum have been trained in tree planting to create tree windbreaks. Tree windbreaks are now growing in a number of target community areas. Several shrubs and tree species are being used as windbreaks that can bring in other income, such as seabuckthorn and current bushes. Leadership and organizational training was given to community leaders and soum coordinators during the project, qualifying them to share experiences. This was evident at the field workshop that the TE team conducted during the field travel, where soum coordinators and community leaders gave quality presentations about the projects and all the activities that have been accomplished.

From talking with herder groups and visiting their areas and presentations at the field workshops, it is evident that in all 13 soum target areas a number of hectares have been set aside or protected from grazing with fencing or with agreed rotational grazing practices. Springs visited during the field trip are fenced and well protected. The field workshop saw photo evidence and heard from project coordinators and community leaders numerous springs in all 13 target soum areas have been fenced and showing substantial re-growth.

Thirteen forest user groups have been established with a number of hectares replanted. The field visits saw saxaual planting operations with a good degree of success. Herders

groups are now better trained and understand how to ensure seedling are grown, transplanted and cared for/watered to ensure a high percentage of success for survival.

6.2 Contributing to project objective

The SLM project went a long way to contributing to the objective as outlined in the log frame. Their support for the Pasture Management Division in the MIA improved the capacity of staff members in areas of pasture and livestock policy, participatory pasture management, monitoring and evaluation and mapping and other areas of pasture management and policy is an example. Project personnel worked with MIA and the Parliamentary Standing Committee on Nature, Environment, Food and Agriculture advising on enabling legal mechanisms for pasture possession and other aspects of enabling legislation. The MNE&GD/NCCD was supported with its work in preparing reports to the UNCCD by sending the secretary to Thailand for a workshop on how to prepare the country report on desertification. The project also worked very closely with the CDS in the Geo-Ecology Institute, supporting with training in China on LADA and supporting CDS staff in other trainings and post-graduate academic qualifications to make them more effective in their work and take on greater responsibilities in combating desertification and land management. ALAGaC of the Ministry of Roads, Construction and Urban Development was also supported by the project with legislation and policy advise and looking at ways of improving the capacity of ALAGaC to be more effective in land and pasture management.

At the local soum level, the project designed and carried out trainings for land and environmental officers in land use planning that was in line with overall soum and aimag development plans. Courses that provided training in the use of arc/GIS data collection, land use mapping, pasture management, local protected area management planning as well as working with herder groups with on the ground training and actions such as building rock nets to prevent sand movement, rehabilitation of hand and deep wells, sylvapasture development and planting of trees. The soum land officers in the target areas now have the capacity to use land use planning tools but to also advise local herder groups on techniques to combat desertification.

6.3 Pasture Coordination Working Group

The project played a contributing role bringing together the Pasture and "Livestock Management Coordination Working Group" and donors to discuss ongoing issues surrounding pasture management and the pasture law now under discussion in Parliament. These regular meetings were effective for donors in coordination and collaboration with the MIA on pasture management issues. Pasture tenor rights, risk management issues and donor coordination and contributions were some of the topics discussed and agreed on during these sessions.

The project also organized in cooperation with the MIA a Round Table Meeting to discuss the current situation in Mongolia and future policies. Bringing in former MIA vice-minister Mr. Jadamba who worked with the project as a national consultant to make a presentation and start the discussion on important pasture issues. The round table discussed policy issues around carrying capacity of pasture, regulating stock movement between aimags and soums, protecting hay growing areas and the rights for pastures in peri-urban areas for herder groups among other items and contributing further to pasture policy development. Coordinating these working group and round table meetings was instrumental in bringing donor and government decision makers together on a regular basis creating better cooperation and progress in pasture management policies.

6.4 Endurance of project supported structures

In conjunction with CODEP, the project supported a research station building at the CDS research center in Rashaant soum, Bulgan aimag. This research station has expanded over the project lifetime to provide on the ground research about which plants and techniques will work in combating desertification and land degradation. As part of the Geo-Ecology institute run by the Center for Desertification Studies, the research station will provide ongoing, up to date research about desertification and land degradation to ministries, other government agencies involved in land management as well as soums and aimag land offices. An important aspect of the research station is its proximity to the main east-west tarmac road and its easy access for the public. Staff researchers at the station stated they encourage the public to visit the station and learn about the desertification issues they research and the challenges the country faces. The Center for Desertification Studies itself is one of the leading agencies in combating desertification research providing valuable information to decision makers and the public alike. Their outreach via publications, videos and internet will be an important long-term contribution. As part of the Geo-Ecology Institute it will work with local administrations and communities after the project ceases.

The eco-school program adopted from CODEP was introduced by the project and has enthusiastic support from the soum school administrations and from the teachers at the school. Other soum schools outside of the project area are learning from the eco-school program and introducing this on their own without external support. The school directors in the soum eco-schools visited during the field travel indicated that due to the popularity of the eco-schools with the students and teachers, environmental classes will become part of the normal school curriculum along with traditional classes. This multiplier effect of the soum eco-school program being taken up in non target areas and the regular school curriculum introducing environmental classes seem to indicate this program will endure.

109 local herder and 13 forest user groups have formed with project support over the past five years. They have had numerous trainings, exchanges and support with equipment

such as 10 tractors, green houses and other equipment to help them learn about and grow their own vegetables, as well as rotational grazing, pasture management, tree planting, milk and wool product production, spring and well rehabilitation and fodder production for livestock. Many of these user groups now grow enough food and hay for household use and to sell to local soum schools and hospitals for additional cash income. There is every possibility that these herder and forest user groups will continue after the project ceases. However, there are concerns about the sustainability of every user group. Not all are the same or have the same natural resources around them to draw on. They are made up of many different individuals who can have their own agendas. Other opportunities from other sectors such as mining could draw members of these user groups away from the area weakening them, or other factors could affect the stability of the group. Another factor is the project soum coordinator positions, which have been a cohesive force for local user groups during the project, will cease at project end. This is also a concern for the sustainability of some groups and the cooperation between soum land officers and herder and forest user groups.

There have been a number of land management and sustainable use of natural resource projects that have shown successes in the past and that the SLM and CODEP projects have built on. Information and awareness about the benefits of herder household cooperation and forming herder and forest user groups is now easily found throughout Mongolia due to efforts by both these projects. There are mechanisms in the law on the environment and other legislation that consider benefits and responsibilities of natural resource user groups and so recognized by law, but this does not ensure sustainability. But there are signs that with so many herder and forest user groups forming that there is indeed the desire for this among the country's herding communities. It has taken many years and many projects, but there is a momentum building that could tip to a much larger movement of herder group formation around the country as more information is available and successful groups continue to grow, prosper, promote and advise other herders on group formation.

6.5 Sustainable Land Management Policy

The project PIU has supported and worked with the MIA and the ME&GD on the development and improvement of enabling legislation and policy. With the recognition of LADA ll by the ME&GD, a standard procedure and approach to combating land degradation and desertification was put in place. Taking it up as policy, the ME&GD has streamlined and coordinated efforts across different ministries, universities and the various research, donor organizations and projects working on desertification issues. The SLM project played a role in this with its support for the CDS through training in China and exchanges with Chinese researchers.

The National Action Program for Desertification was revised with project support and is the guiding document on combating desertification in Mongolia. "*The NAP CD is embedded into the overarching policy and legal framework of Mongolia, including the Constitution and legislation of the country and international commitments and conventions."* The overall objective of the NAP is: "*To prevent, cope with and revert desertification and land degradation in Mongolia to ensure environmental sustainability, improve livelihoods of the rural population and generate environmental services of global importance."* The NAP also calls for "*Strengthening institutional capacity, improving the legal and policy framework, enhancing science, technology and knowledge, increasing advocacy, awareness raising and education, intensifying concrete actions at the grassroots level and increase investment"* The NAP also states the NCCD will be the main coordinating body for combating desertification and be located in the ME&GD.

The new "Law of Mongolia on Soil Conservation and Desertification Control" comes into effect at the beginning of 2013. The SLM project activities have had influence in its design. The goal of the law is to: *"regulate the relations with respect to the soil from degradation, soil rehabilitation and prevention from desertification."*(Unofficial translation)

This new law is a significant step towards combating desertification in Mongolia and gives legal backing to taking strict action to prevent soil loss and further land degradation through mismanagement of pasture. It also gives citizens a mechanism to demand by law that local soum and aimag authorities enforce the law if they are not.

The project PIU worked closely with the MIA to develop and improve on past attempts at creating a pasture management law. Drawing on field experiences and former proposals for a pasture management law, the MIA now has a law on pasture written up and sitting with Parliament to discuss and approve. When the pasture law is approved and comes into effect, it will add to and strengthen the package of laws pertaining to sustainable land management.

6.6 Changing Attitudes

During the field travel to both Sukhbaatar and Uvurkhangai aimags, the TE team heard from numerous community members about the many trainings and activities they have accomplished with the support of the SLM project. During the field workshops and visits to targets sites people mentioned again and again, that at first they did not believe desertification could be reversed and that it was a natural phenomenon they had no control over. They did not believe that springs once covered in sand could be rehabilitated or that trees could be planted and grow creating windbreaks for vegetable

gardens or other uses. This was especially heard in Sukhbaatar aimag where there had been no previous projects working and is a treeless, rolling, grassland steppe.

Now after five years of the project, with herder community gardens flourishing and producing vegetables and fruit for both household use and enough to sell to local soum schools and hospitals, springs uncovered and flowing again, winter fodder being grown and put up for livestock, their attitude towards combating desertification has completely changed to a very positive view. They now have much more information about land degradation and desertification and its causes, as well as sustainable land management. Herder communities now work closer with soum land, environmental and pasture management officers and have access to and contact with researcher institutes and universities. Attitudes have definitely been changed favorably towards SLM within soum government and herder communities.

6.7 Key Species

With support from the project, the DCS has been researching a number of plant species to use for a variety of purposes in combating desertification and helping to stop sand movement as well as raising rare desert species and rescue from possible extinction. Perhaps most significantly though is support to communities in developing saxaul nurseries to grow saxaul seedlings and replant these when they reach an appropriate size and age. If this can be taken up on a much larger scale and larger areas of saxaul can be replanted and grow, it could transform the desert and re-establish saxaul forests as they once were. This in turn would again create habitat for a number of wildlife and bird species, like the wild Bactrian camel and the saxaul sparrow. When forest habitat is created, wildlife will return. It is an exciting prospect to see that saxaul forests can be regenerated.

7. Key Findings

- **National Committee for Combating Desertification has been strengthened, Minister of ME&GD head of NCCD**

Outcome 1: Strengthened coordination mechanisms, institutional and human resources capacity, and knowledge base to promote SLM and desertification control.

Output 1.1: Coordination and monitoring capacity of the National Committee for Combating Desertification (NCCD) strengthened with regard to UNCCD-NAP and SLM. [This output is achieved jointly with the SDC/GoM Project on Coping with Desertification in Mongolia].

The NCCD is comprised of 11 ministries and 7 other agencies and government institutions. Its function and importance is to coordinate and monitor activities that address land degradation and desertification. The project played a role in strengthening the NCCD. Most significantly is that the head of the NCCD is Minister for Environment and Green Development and will take the leading role in its activities.
Impact – The NCCD secretary through training in Bangkok, Thailand, has a clear understanding of the UNCCD and Mongolia's position within this. The NAPCD was improved, giving the NCCD a clear and direct policy to plan for and monitor desertification control on a national level across all sectors and ministries.

- **Enabling Legislation and Policy improved with the NAP for Combating Desertification, Budget law, and Law of Mongolia on Soil Conservation and Desertification Control and pending Law on Pasture.**

Outcome 2: SLM mainstreamed into national, provincial and local policies, strategies and regulatory framework.

Output 2.1: The Pastureland Law, Land Law and associated environmental legislation are mainstreamed into Aimag, Soum, Bag and community level planning and programming processes with special reference to land use planning and co-management of natural resources.

A package of improved enabling legislation and policy for combating land degradation and desertification and pasture management is now in place giving considerable weight to all levels of government and citizens to undertake activities and programs to address this issue. The SLM/ PIU worked closely with the MIA to improve the pending Law on Pasture that now rests with Parliament and is in discussion. Once approved this law will strengthen aimag and soum land management planning for better pasture management

and work towards reversing the affects of overgrazing and land degradation it causes. The National Action Plan for Combating desertification was improved with project support and approved by the GoM in 2010. This created an ***overall policy framework*** *with which to address and combat desertification and strengthening the basis on which aimag and soum land management planning is done. The new Law of Mongolia on Soil Conservation and Desertification Control will come into force at the beginning of 2013. This law directly addresses overgrazing as a main cause of desertification and soil loss and has provisions that obligate aimag, soums and citizens to take action to address these issues. It will be a valuable tool for aimag and soum land, environmental and pasture management officers in their yearly land management planning. The Budget Law of 2010 provides a mechanism for funding local environmental initiatives that can help with combating desertification activities. Soum governments and local herder groups will be able to use this law to obtain funding for local environmental and conservation activities. With proper oversight and monitoring by the governor, citizens representatives khural, the soum pasture management committees formed through the project and citizens themselves, this funding mechanism can be a positive influence on local conservation efforts.*

Impact – This package of laws and policies supported by the SLM project gives clear lines of responsibility for combating land degradation and desertification at all levels of government. The new Law of Mongolia on Soil Conservation and Desertification Control requires government agencies to take strict actions against the human causes of land degradation and desertification. It also requires individual citizens to report and address these issues and take action against local soums and aimag administrations for not taking measures to prevent land degradation causes. If strictly followed, this could require anyone who is causing degrading the land through overgrazing or other actions, be removed from using that land. The Budget Law of 2010 holds a mechanism whereby citizens can make proposals to their soum governments to fund environmental and conservation actions. Income to the national budget has increased through mining revenues and starting in 2013 more funds will be available to soums for various uses. This gives individuals or groups, herder or forest user groups viable potential sources of financing to continue and expand SLM practices.

- **Academic Recognition of SLM with NUM and State University of Agriculture now teaching undergraduate courses as well as MSc and Ph.D. post-graduate studies**

Output 1.4**:** Courses on SLM at B.Sc. degree level offered in the Mongolian National University and Agricultural University. Curriculum developed and implemented in the two institutions for 2 academic years.

With project support, Sustainable Land Management is now a recognized discipline for study at both the National University of Mongolia and the Mongolian State University for Agriculture. This is a significant step in educating practitioners and research persons for professional service in what will be a massive challenge for Mongolia, reversing desertification and productively managing the land for livestock, agriculture, mining, wildlife and protected areas.

Impact – Having well trained practitioners in SLM at the soum and aimag level will see a much improved understanding of land degradation, desertification and methods to reverse these practiced at the local level. The large majority of undergraduates who have taken SLM courses will return to their aimag of soum. It is there that they will put to practical use the knowledge they have gained in SLM as they take up positions with local government land agencies. With more post-graduate students at the MSc and Phd level, capacity has been built to increase research into land degradation and desertification and SLM practices. Already, staff of the Center for Desertification studies who have gained their MSc with project support have taken up more management and research responsibilities within the CDS, which will lead to better research and understanding of the issue and impact policy decisions and actions on the ground

- **Government Agency resource persons from CDS and ALAGaC trained in LADA ll methodology and recognized by ME&GD as accepted standard practice**

Outcome 1: Strengthened coordination mechanisms, institutional and human resources capacity, and knowledge base to promote SLM and desertification control.

Output 1.5: Center of Desertification Study strengthened with particular focus on research and outreach in SLM and desertification control, with specific reference to (a) water harvesting, (b) land degradation assessment, (c) sylvopastoralism, and (d) windbreak systems.

Land management agency personnel with project support trained in China on Land Degradation Assessment or LADA. Visits by Chinese trainers of LADA also took place in Mongolia. LADA ll was developed for Mongolian conditions. Significantly the MN&GD has approved LADA ll as the national standard methodology for measuring desertification and addressing the issue. This puts Mongolia at international standard for measuring desertification and land degradation and better able to share its knowledge globally on this serious issue.

Impact – With LADA ll methodology now approved by the ME&GD an resource persons trained in both ALAGaC and CDS, a national standard and scientific approach is now being used to measure land degradation and desertification and a coordinate efforts

across all sectors in taking measures to reverse these detrimental processes. This will save a considerable amount of time and financial effort in combating desertification.

- **Soum Officers Trained in SLM and land use planning using arc/gps and computer software**

Outcome 3: Pilot testing, demonstrations and scaling-up community based approaches in integrated natural resources management with focus on grassland and water management and sylvopastoralism.

With project support, soum and land officers were trained in the use of arc/gps and the software to use this valuable land management tool. They now use these tools to undertake annual soum level annual land management planning. Through the training they have a better understanding of modern land management techniques and a better connection to research and land management agencies like ALAGaC and CDS and be able to make better land management decisions when working with local herder groups and other citizens or entities.

Impact – Land use mapping and decision making will be better facilitated through the use of modern data collection and analysis, allowing soum level land officers to have a much clearer understanding where land degradation and desertification is taking place in the soum and what cost effective measures to take in working to reverse the situation. Having this ability, they will clearly be able to see the impacts of desertification and the impacts of measures taken to improve land health and developing more informed decision making. Soums can better plan with herder groups and households on pasture rotation and resting and overall natural resource management.

- **Herder groups trained in Combating Desertification and practicing Agreed Rotational Grazing**

Outcome 3: Pilot testing, demonstrations and scaling-up community based approaches in integrated natural resources management with focus on grassland and water management and sylvopastoralism.

Output 3.1: Pilot activities in all 13 soums to develop and scale up effective local institutional framework for participatory planning processes and to implement best practices for co-management of pastureland and other natural resources.

The project provided many training's to herder groups for improving hand wells, clearing and rehabilitating springs, fencing for spring protection and fodder areas creating stone nets to prevent sand movement and planting trees for wind breaks. A significant aspect of this training is the herder agreed rotational grazing practices now

being used in the target areas. This is a return to a traditional form of grazing management lost with the transition to a market economy. With or without a pasture management law, this is an important step to resting and rehabilitating pasture and addressing the issues of overgrazing, the main cause of desertification. The DVD on rotational grazing produced by the project and the accompanying booklet "guidelines for pasture rotation and resting" were reported to be extremely useful to soum government officials in understanding and creating rotational grazing agreements with herder groups. With 961,700 hectares now recognized as being protected through this mechanism and showing positive results in the 13 target soums, the agreed rotational grazing practice will be one of the most significant "on the ground" accomplishments of the project.
Impact – In the 13 target soums an area of 961,700 hectares of pasture have been agreed to be used for rotational grazing, almost a million hectares. Other herder households and groups outside the target area are reported to be making these same agreements and beginning to again practice this traditional form of pasture management. This is an important replication of project activities. Areas that have been rested are showing signs of healthy growth with improved vegetation cover and grassland biodiversity.

- **Eco-Schools educating countryside youth now operating in 69 soum schools in both the UNDP SLM project and CODEP**

Output 3.1: Pilot activities in all 13 soums to develop and scale up effective local institutional framework for participatory planning processes and to implement best practices for co-management of pastureland and other natural resources.

Environmental education and ecology programs have been in Mongolia for some time, however the development and implementation of the eco-schools by CODEP and taken up by the SLM project present a great opportunity to educate youth in the countryside areas on environmental, conservation and sustainable land management, as well as land degradation and combating desertification, where it is desperately needed. The program is now in 69 schools in both the UNDP SLM and CODEP project soums and is enthusiastically embraced by the soum schools and teachers and interestingly, surrounding soums are now taking up and organizing eco-schools in soums outside the project areas. This is a good multiplier effect of the projects.
Impact – School children in the project target area are now much better informed about environmental and conservation issues in their soums. This has led to students and teachers taking actions to clean up soum center rubbish and planting trees around the school and soum center. Through these activities, their parents are learning more about the environment, conservation, land degradation and desertification as well and becoming involved in eco-school activities. This is important, that the information gained about the environment is being disseminated widely and that parents also are learning from the eco-school program. There are also schools from the surrounding soums who have expressed

interest in the program and have begun to implement this in their own schools, replicating the eco-school effort introduced by the project. In the Baruunbayan Ulaan soum school, the school director is now incorporating environmental courses into the normal school curriculum to be taught on a regular basis.

- **Springs rehabilitated and flowing, Taatsiin Tsagaan Nuur re-fills after 12 years of desiccation.**

Outcome 3: Pilot testing, demonstrations and scaling-up community based approaches in integrated natural resources management with focus on grassland and water management and sylvopastoralism.

The project worked with soum land officers and herder groups to rehabilitate 83 springs throughout the 13 target soums and implement better spring protection and water management. The Altanbulag spring in Tuvshinshiree soum, Sukhbaatar aimag where tons of sand were removed is an example of rehabilitating a spring back to its former water flow. The Taatsiin Saagan nuur (lake) suffered desiccation due the Taatsiin gol (river) drying up and being covered by sand before reaching the lake bed. With project support the citizens of Baruunbayan Ulaan soum cleared the river channel of many tons of sand and got the river flowing again. The lake is now filled with life returning to its shores and waters. These are examples of targeted interventions that can rehabilitate important water sources when people work together.

Impact – Throughout the 13 target soums, 83 springs were rehabilitated, providing water for livestock, household use, haymaking and vegetable growing areas. This has improved human and livestock health with increased water and food sources and increased cash incomes from the sale of excess hay and vegetables. Livestock have additional waters sources to draw from and are less concentrated around only a few water wells or springs as was the case before spring rehabilitation. This in turn has decreased livestock trampling around a few concentrated water sources and increased the ability of these areas to rejuvenate.

Taatsiin Saagan Nuur (lake) was refilled to its former levels after 12 years of desiccation when the taatsiin gol (river) was blocked due to sand movement covering up the lower reaches of the river. Life around the shallow lake has returned with wetlands being rejuvenated, shoreline reeds growing again providing habitat for wildlife, waterfowl, and other birdlife, along with small fish and amphibians. Water is life and the biodiversity of this lake/wetland area is again increasing.

- **Saxaul seedlings successfully regenerate areas for potential saxual forest rehabilitation**

Output 3.5: Pilot projects in "sub-desert zone", in two Gobi Soums (Bogd and Baruun Bayan Ulaan) of Uvurkhangai Aimag on saxaul protection and rehabilitation

The Taats herder group and the Altann Nug cooperative in Baruunbayan Ulaan soum have been jointly operating a saxaul tree nursery successfully for the past three years after training from the CDS. Saxaul seeds are collected, planted in small pots made from plastic sheet (tube pots) and, when cared for properly, grow to seedlings and can be planted after two years. They will be expanding this operation and are making plans to double the hectares of planted saxaul forest in 2013. The prospect of being able to do this on a much larger scale across the gobi is promising. If taken up by the GoM as a saxaul reforestation effort, the gobi could once again see considerable areas of saxaul forests regenerated.

Impact – 16 hectares of saxaual forest have been successfully replanted providing wind breaks creating a natural barrier and holding sand in place preventing sand movement. As the saxaul is replanted and forests increase their natural ability to self regenerate increase along with habitat for desert wildlife and biodiversity.

8. Lessons Learned

8.1 National Level Cooperation

The Sustainable Land Management project addresses one of the most pressing environmental issues facing Mongolia to date with land degradation and desertification. Degraded land, soil loss, removal of grass and forest cover, drying up of springs, rivers, lakes, wetlands and dropping water tables nationwide, cannot be stopped or reversed effectively by one entity alone, whether it is a government ministry, university, donor agency or local communities. The issue of land degradation and desertification as it is happening nationwide in Mongolia must be a partnership and collective action by the best the national and international community has to offer if this situation is to be reversed. Desertification throughout Mongolia has affects far beyond its borders. The important lesson of this project is that national ministries such as the Ministry for Environment and Green Development and the Ministry for Industry and Agriculture and other ministries and government agencies, must work in unison and with one voice alongside national universities, aimags, soums and local communities and multiple international donors to address what really is a national security problem. Desertification mainly caused by livestock overgrazing is literally blowing the topsoil of Mongolia away. In the 1930's, when the United States of America was suffering extensive land degradation due to years of mismanagement and destructive land practices, President Franklin Delano Roosevelt stated, "A nation that destroys its soils destroys itself." That is the situation in Mongolia today. This can only be addressed by national and international collective action. The SLM project has contributed to this effort.

8.2 Pasture Management

Pasture in Mongolia is part of the public domain. This sentiment is so strong that it is even enshrined within the Constitution as belonging to the people of Mongolia. With the inception of this project, as well as other natural resource projects, addressing pasture management through supporting the creation and use of a "Law on Pasture" has been prioritized. Outcome 2, Output 2.1 of the project log frame states *"The Pastureland Law, Land Law and associated environmental legislation are mainstreamed into Aimag, Soum, Bag and community level planning and programming processes with special reference to land use planning and co-management of natural resources."* However, a pasture law has proven contentious and various forms of a pasture law have been debated by Parliament with little success. It is a Constitutional issue as well as a controversial natural resource management issue. There may one day be a pasture law governing its use, but at the moment it is slow in coming. This does not mean that good pasture management cannot take place using existing laws and good pasture management practices like rotational grazing and that they become the norm and de-facto policy within Aimags and soums. The Law on Land and the new Law on Soil Conservation and Desertification Control

have clauses in them that mandate proper use of pasture. One of the lessons of this project is that at the local level, Aimag and soum, herder groups and cooperatives are agreeing with each other and local government authorities and land use agencies on rotational grazing practice and management. As soum land officers and herder communities see the benefits of rotational grazing they agree this should be a standard pasture management practice. Herders in the target area state that as herders from outside the target areas see these benefits in action, they too are discussing and agreeing on rotational grazing management. This is a multiplier effect that could become the norm and accepted practice by soum and aimag land offices. The SLM project and the CODEP project have helped these practices gain ground.

9. RECOMMENDATIONS:

9.1 Policy Makers

1. With both the UNDP/SLM project and the CODEP project finishing at the end of 2012, support for these projects comes to an end for the participating stakeholders throughout the country. Due to the recent elections both nationally and locally, many new government positions have been filled with people who will have decision making responsibilities but have little knowledge of these projects or what has been accomplished under them. There will be a gap in knowledge of project activities and accomplishments that will need to be filled if sound government decision making concerning SLM is to be undertaken. It is therefore recommended that the MIA and the ME&GD convene a workshop between relevant ministries, government agencies, universities, donor organizations and other key stakeholders from aimags and soums, to discuss ministry/agency follow-up, and next steps. Workshop findings and recommendations should be presented to the GoM and the NCCD to inform them of the direction that should be pursued in addressing land degradation and combating desertification and where government support for SLM policy and "on the ground" action is best targeted.

2. Combating land degradation and desertification is a problem of national dimension. The public as well as government decision makers must be kept well informed and current on the situation throughout the country and how each citizen can take part in preventing or reversing this phenomenon. It is recommended that a public event be developed through an annual "Combating Desertification Forum" to help highlight this issue to bring in and make available the most up to date information. Because of its importance, the NCCD should be responsible for organizing this type of event and drawing on all its members to do so.

   There is already an annual forum on protected areas supported by the UNDP SPAN project in partnership with the ME&DG. The first event on this issue in 2009 drew much public and media attention. The public of Mongolia is interested to know about environmental issues that directly affect them. The same needs to be done with national efforts to combat land degradation and desertification and promote sustainable land management practices.

   To make it as effective as possible a forum could be held in coordination with World Day on Combating Desertification and Drought, to highlight the issue among the general public and include wide news media coverage and documentaries on combating desertification and mitigation activities.

9.2 UNDP

3. The UNDP SLM project focused much attention on water harvesting, spring and well rehabilitation and protecting water sources as part of sustainable land management. With project support, Taatsiin Sagaan Nuur in Baruunbayan Ulaan soum was replenished to its former level and so doing, wetland and lake, biodiversity is again flourishing. This is an example of a targeted intervention for a specific water problem in a specific ecosystem that the project has gained experience in. Along with combating land degradation and desertification, water management issues throughout the country are becoming a growing concern, especially in the Gobi. Watershed management is land management. The SLM project overlaps in many of the issues they addressed with the newer UNDP "Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia" project which is now in its 2nd year. There would certainly be synergies between the two project that the latter project can take advantage of. The UNDP would be wise to look into these to see what can be gained and expanded upon to formulate new possibilities in sustainable land and water catchment management on at a local and regional scale.

4. A question heard on the field trips by workshop participants was about sources of funding and information as to where to find them. The Publication of a booklet or pamphlet compiling and listing sources of funding for local communities for combating soil degradation, desertification and environmental protection activities and how to organize, lobby and monitor local government for funding purposes would be welcomed by both herder communities and local governments alike. Publishing and distributing such a booklet would be welcome at the local soum level and contribute to local efforts at sustaining activities learned from the project.

5. Baruunbayan Ulaan soum soum school has a very active eco-school program involving most of its students and many of its teachers. They are growing a variety of plants and look to growing and planting trees and bushes around the soum to contribute to efforts with windbreaks and beautifying the soum center itself. To help jumpstart and maintain this, the school could use a green house similar to those provided to herder groups. This would help their program to further enhance their activities with environmental education and the use of plants and bushes for conservation, water and soil protection and berry bushes for income generation. If this was tied into a lake monitoring system a greenhouse supported by the project could be used for starting plants and bushes needed to prevent sand movement around the lake and undertaken as part of their eco-school program.

9.3 Security/Safety Issue

6. Fit all UNDP vehicles used for countryside travel with an internal engine heater of a Wabasto type. The TE team traveled during the beginning of winter when temperatures were starting to fall and winter storms are more frequent. Although there was no trouble and all off tarmac travel on dirt tracks was done in tandem with another vehicle, there was still potential that the newer Toyota Land Cruiser vehicles could be rendered helpless should the temperatures fall below -30c for the night. These are excellent vehicles for Mongolia field travel, but without an internal engine heater in these remote locations it would be very difficult to start the car without resorting to unusual field tactics to warm the engines. It is not uncommon to build a fire under the Russian made vehicles to warm their engines. This is unacceptable for UNDP field vehicles like the Land Cruiser. This could leave UNDP personnel in an extremely vulnerable position, should one become ill or injured and need transportation to an aimag center or the capital city. An internal engine heater is just a push of a button and within 20-30 minutes the vehicle can be started safely in severe cold temperatures.

9.4 Local Governments/Herder Communities

7. There has been much information and knowledge compiled by the project in working with soums and herder groups. The soum project coordinator has played a major role in this effort and at coordinating the trainings, seminars, exchanges and herder and forest group organization. The local soum coordinators are really walking libraries of information and knowledge and have filled a gap between local government and herder groups and cooperatives. With the project coming to an end, these positions cease to exist in their current form. It would be wise of local soum governments to use new increased budget allocations for 2013 to create a "resource user group coordinator" position within the soum administration and make use of project field coordinators and their accumulated knowledge and experience.

8. The project supported the establishment of 4 local pilot protected areas. Although a positive effort in contributing to the overall national LPA network, the areas are still rather small in size. It is well known that the larger the protected area, the better species chances at survival and regeneration. Soum governments in all 13 target areas should consider substantially increasing the size and numbers of local protected areas, how they can form links or corridors between them and developing co-management plans to help govern them.

9. Lake monitoring program for the newly refreshed taatsiin tsaagan nuur (lake) to monitor for returning species of plants and animals. Fish, frogs, birds and other wildlife are reported to be returning after 12 years absence to where water is now being held in a previously dry lake bed. The monitoring program can be built into the current school environmental program and curriculum and linked to the local environmental officer and possibly with the CDS or an Ulaanbaatar based university. The school director is a biologist by training and is keen to expand the environmental program. This would be an excellent opportunity for local school students to see and monitor any changes in the lake and the progress of environmental processes right on their doorstep. Not only would they see life returning to the once dry lake bed, but learn how the process happens and become lifelong advocates of environmental protection, combating desertification and soil loss.

10. Larger fenced areas around rehabilitated springs are needed to give these sites more of a protected area to draw from. A number of the springs visited on the field trip really did not protect enough of an area around the water source especially uphill and above springs in the surrounding water catchment areas. Fencing off larger areas around springs would prevent livestock trampling and allow more plant cover, bushes or trees to grow which will enhance water saturation of the soil feeding the springs as well as increase wildlife use of the area, giving them larger and safer places to access water.