

Annex 18b – Evaluation Reports of Baseline Projects

- 1) Terminal Evaluation of the “Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia” (2017)
- 2) Mid-term Review of “Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia” (2015)
- 3) Terminal Evaluation of “Sustainable Land Management for Combating Desertification in Mongolia” (2012)



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Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchment in Mongolia

UNDP PIMS: 4505

UNDP Project ID: 00079875

AF Project ID: MNG/MIE/EBA/201

AF Agency: United Nations Development Programme

Executing Agency: Ministry of Nature, Environment and Tourism

Focal Area: Climate Change



Report of the Terminal Evaluation Mission October 20, 2017

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Project Period 2012-2017

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Terminal Evaluation Report
20 October, 2017

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The views expressed in this report are intended to offer an overview of, and some of the lessons learned from this Project as it comes to its conclusion. We have tried to balance our thoughts and to offer fair perspectives of what was observed and learned from people far more knowledgeable about the Project and its context than we will ever be.

And finally, one of the delights of this sort of work remains that of visiting a new and extremely welcoming country and going home again having made new friends, seen new things, and witnessed with great admiration the dedication and enthusiasm that so many people bring to their work in managing natural resources of the Mongolia sustainably addressing water basin issues. We would like to thank them and wish them every success in their continuing endeavours.

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20th October 2017

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Acronyms and Terms

AF	Adaptation Fund
CBO	Community Based Organisation
CO	Country Office
CPAP	Country Program Action Plan
EA	Executing Agency
EbA	Ecosystem Based Adaptation
GDP	Green Development plan
GEF	Global Environment Facility
GIZ	German Society for International Cooperation
GLD	Great Lake Depression
GoM	Government of Mongolia
HQ	Head Quarters
IA	Implementing Agency
IFAD	International Fund for Agriculture Development
IWRM	Integrated Water Resource Management
IWRMP	Integrated Water Resource Management Plan
LDRR	Land Degradation Risk Reduction
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MCUD	Ministry of Construction and Urban Development
MEG	Ministry of Environment and Green Development
MNET	Ministry of Nature, Environment and Tourism
MET	Ministry of Environment and Tourism
MoU	Memorandum of Understanding
MTR	Mid-Term Review
NEX	National Executive Modality
NGO	Non-Government Organisation
NPC	National Project Coordinator
NPD	National Project Director
NRM	Natural Resource Management
PB	Project Board
PIF	Project Information Framework
PIR	Project Implementation Review
PMO	Project Management Office
PIU	Project Management Unit
ProDoc	Project Document
RBA	River Basin Administration
RBC	River Basin Council
ROtI	Review of Outcome to Impact
RRF	Result and Resources Framework
SLM	Sustainable Land Management
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
TE	Terminal Evaluation
TEC	The Nature Conservancy
TNC	Third Nation Communication
UNDAF	UN Development Assistance Framework
UNDP	United Nations Development Programme

US\$	United States Dollar
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund

Currency of Mongolia is the Mongolia Tughrík (MNT). At the time of the final evaluation, US\$ 1 = MNT 2,422.75

ii. Executive Summary

This Terminal Evaluation (TE) has been conducted as part of the Monitoring and Evaluation plan of the UNDP/GEF Project: “Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchment in Mongolia”, and will be referred to as the “Project” in the scope of this report. The TE mission to Mongolia was conducted from 1st to 13th October 2017. Extensive consultations with the project partners were also conducted prior and following the mission to ensure a good understanding of the project’s results; leading to the submission of the TE report on the date of this report.

Project Summary Table

As per requirements for TE, the Project Summary Table is provided below:

Project Summary Table				
Project Title:	Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchment in Mongolia			
AF Project ID:	MNG/MIE/EBA/201		at endorsement (US\$)	at completion (US\$)
UNDP Project ID:	PIMS 4505	AF Fund:	5,069,124	4,440,778.07
Country:	Mongolia	Government of Mongolia in Kind:	5,000,000	
Region:	Asia Pacific	UNDP (DDC/CO):	500,000	492,062.66
Focal Area:	Climate Change			
Executing Agency:	Ministry of Environment and Tourism (MET)	Total Project Cost:	10,569,124	4,932,840.73
Other Partners involved:	<ul style="list-style-type: none"> • UNDP • Local Communities 	ProDoc Signature (date project began):		18 Nov 2011
		(Operational) Closing Date:	Proposed: 31 Dec 2017	Actual: 31 Dec 2017

Brief Description of Project

Mongolia covers 1,564,116 square kilometres (603,909 sq. mi) is the 18th largest country in the world by land mass and has population of around three million people. It is also world’s second largest landlocked country. This country has very limited arable land while most of its land area is covered by grassy steppe, mountains to the north and west and the Gobi Desert to the south. Ulaanbaatar is the capital and largest city and is the home of about 40-45% of the total population. The nation has relatively little cultivated land. As per the project document estimate at project development time estimates was 380,000 ha. The primary crop is wheat. The total amount of irrigated land is approximately 43,000 ha, mostly for vegetable production. Cultivation contributes 3% to the nation’s GDP.

The country is a globally important watershed with three major water systems: the closed “Central Asian Internal Drainage Basin (“Great Lakes Basin”) in the west, the Arctic Ocean Basin in the north, and the Pacific Ocean Basin in the east. The nation has over 5,000 streams and eighty-five percent of the water is fresh. Total surface water resources are estimated at 599 km³ stored in lakes (500 km³), glaciers (62.9 km³) and rivers (34.6 km³). Ground water resources, although not rigorously quantified, are estimated at 10.8 cubic km. In spite of these

resources, Mongolia is water scarce. Classified as semiarid to hyper-arid, precipitation ranges between 50 to 400 mm with highest rainfall in the north and lowest in the south. Approximately 90% of the precipitation evaporates and 10% forms surface runoff with only partial ground water recharge. The pace of glacier loss has quickened in recent years. The total glacier area in Mongolia decreased by approximately 22% over the last sixty years. The total loss from 1940 to 1992 was 12%. Mongolia's glacier's shrunk by an astounding 10% from 1992 to 2002. Surface water is actually increasing in Mongolia's mountainous north and west as climate change quickens permafrost and glacier melt. In these areas, water stores and riparian areas are gaining. This trend will continue for several decades until frozen water reserves are depleted. In the remainder of the country, surface water is already decreasing. The 2007 water inventory reveals that 852 rivers and streams out of a total of 5,128 have dried up; 2,277 springs out of a total of 9,306 have dried up; 1,181 lakes and ponds out of a total of 3,747 have dried up; and, 60 springs out of a total of 429 have dried up.³ Even The entire country relies primarily upon summer rains to provide moisture. From 1940 and 2007, the average annual precipitation decreased by 7 percent. In particular, the amount of precipitation has decreased during the summer months. There is an increasing tendency for precipitation to fall in short heavy bursts, instead of several moderate ones. It is projected that precipitation will decrease in the short term by 4 percent between 2010 and 2039.

Most natural resources management in Mongolia is relatively limited. Grazing is de facto open access. Nearly all of Mongolia's land-base, including pastureland, is publicly owned. Prior to 1991, grazing was regulated by a centralized system that maintained traditional nomadic patterns while regulating herd structures, grazing locations, and times. Approximately 70% of all livestock were owned by the State. After 1991, herds were completely privatized and most grazing regimes collapsed. Grazing is now defined largely by an open access system with retention of some traditional management practices and limited government oversight. Policies promote increased production and herd size.

Regulation and management of water resources is inadequate. Ground water extraction requires only a simple permit from the National Water Authority. Surface water use is largely un-regulated. Many surface water bodies are monitored for both quality and quantity and the Government is moving forward to support IWRM principles and practices. This includes fostering the development of River Basin Councils and supporting water resource use plans for 14 of 29 basins. River Basin Councils were authorized by a 2004 revision to the existing Water Law. The revisions allow for the creation of River Basin Councils to act as stakeholder advisory groups to forward the concept of Integrated Water Resources Management (IWRM). Basin Councils are voluntary and consist of representatives of water users and consumers, government, nongovernmental, and specialized or professional organizations.

Unsustainable agriculture and development practices already maximized Mongolia's natural resource use beyond sustainable limits. Mongolia's ecosystems do not have the resilience and reserves required to cope with any further stress. If current trends continue and unsustainable management practices persist, the vulnerability of Mongolia's rural communities will increase as climate change accelerates the deterioration of land and water resources and associated ecosystem services. The additional impacts represented by climate change will very likely dismantle Mongolia's already vulnerable ecosystem services.

The EBA project is designed to maintain ecosystem functions and water provisioning services addressing the needs of critical for survival of rural communities and national economy. It aimed to increase climate change resilience at a landscape level. This project attempt to address issues related to maintaining water services and ecosystem functions by Strengthening Institutions at communities and government and increase knowledge on adaptation, enhanced stakeholder participation as well as capacity building of rural communities in decision making.

The project's objective is to maintain ecosystem functions and water provisioning services addressing the needs of critical for survival of rural communities and national economy. The project is implemented in two large landscapes: Turgen/Kharkhiraa sub-river basin in Altai Mountains and Great Lakes Depression (Altai/GLD) eco-

region and the Ulz river basin in the Dornod steppe and Mongol Daurian eco-region achieved through 3 major outcomes plus a project management component.

The project sought to achieve three outcomes:

- Outcome 1: Integrated strategies/management plans for target landscapes/river basins developed and under implementation;
- Outcome 2: Implementing landscape level adaptation techniques to maintain Ecosystem Integrity and Water Security under Conditions of Climate Change;
- Outcome 3: Strengthening capacities/Institutions to support EBA strategies and integrated river basin management, their replication and mainstreaming in sector policies.

The Project Document was approved jointly by Government of Mongolia, AF and UNDP in April 2011 for the duration of Six years. The Project was executed by the Government of Mongolia's Ministry of Nature, Environment and Tourism through Project Implementation Unit (PIU) with support from UNDP Country Office (UNDP CO) in close coordination with various other institutions and local communities. UNDP as implementing agency was responsible for the completion of all activities including procurement, recruitment, monitoring, and financial disbursement. The Project has been executed in accordance with the standard rules and procedures of the UNDP National Implementation Modality (NIM) (in the beginning implementation was through NEX modality). The Project budget is US\$ 10,569,124 of which US\$ 5,069,124 is the AF Grant and US\$500,000 is provided by the UNDP CO. The remaining financing is provided by the Government of Mongolia (US\$ 5,000,000).

Rating Table

As per UNDP and GEF's requirements for TE, the Terminal Evaluation Rating Table is provided below:

1. Monitoring and Evaluation	Rating	2. IA & EA Execution	Rating
M&E design at entry	Highly Satisfactory	Quality of UNDP supervision/backstopping	Highly Satisfactory
M&E Plan Implementation	Highly Satisfactory	Quality of Execution by Executing agency	Highly Satisfactory
Overall quality of M&E	Highly Satisfactory	Overall quality of Implementation / Execution	Highly Satisfactory
3. Assessment of Outcomes	Rating	4. Sustainability	Rating
Relevance	Relevant	Financial resources:	Likely
Effectiveness	Highly Satisfactory	Socio-political:	Likely
Efficiency	Highly Satisfactory	Institutional framework and governance:	Likely
Likelihood of Impact	Highly Satisfactory	Environmental :	Likely
Overall Project Outcome Rating	Highly Satisfactory	Overall likelihood of sustainability:	Likely
		Stakeholder participation	Highly Satisfactory

Note: Justification of rating is given in Annex XIV.

KEY SUCCESSES

Project has contributed to safeguard livelihood of the farmers and pastoralists by improving management of water and protecting river basins. This also contributed to the United Nations Development Assistance Framework (UNDAF) outcome focusing on supporting development of sustainable livelihoods and employment for vulnerable segments of the Population in Mongolia, through building the capacity of the UNCCD Focal Point,

protecting springs, promoting sustainable agriculture, improving pasture land for increased productivity, reducing economic and gender disparities, strengthening monitoring of glacier, rivers, weather and ground water and reducing environmental shocks and recovery. Similarly, improved management of water, rangeland and forest and decrease in use of coal contributed to greenhouse gas reduction and sequestration to mitigate climate change. Introduction of high value crops and increased production from agriculture and livestock through improvement in farm practices with improved irrigation facilities helped to improve household economy which also increased resilience of community to challenges of worse climate change. Project provided opportunity to develop leadership among women and also provided economic development opportunity through various economic development activities and microenterprises. Cooperation were established at the village level to implement natural resource management (water, agriculture, livestock etc.) resolve conflicts, manage fund for micro-enterprise development and coordination with the government agencies.

The project helped to make provincial government (Aimag) understand the peoples need, integrated and participatory approach of planning and implementation. Project also enhanced capacity of the government (local/national level) by establishing monitoring stations for monitoring glacier, river, ground water and weather and also providing trainings. Capacity of the community groups were also enhanced on various subject including climate change, sustainable agriculture practices, water management, environment protection, enterprise development skills etc. Local governments were assisted to develop green development plans. Similarly, project contributed to develop integrated river basin management plan and also proposals to bring critical catchment areas under protected area system. Success encouraged to develop three more proposals for arranging money to upscale lessons from this project and government has also shown interest to contribute in kind for replication.

The project closely collaborated with the various ministries, Aimags and Soum level government, private sector, research institutes and community groups. Furthermore, through capacity enhancement and establishment of a knowledge base contributed in mainstreaming integrated river basin management, through management and other climate change issues in the development planning process of the Aimag and Soum government. Through the project activities, local communities, community based institutions and government have begun to understand the link between water and land management activities and the potential impact of climate change on those activities, as well as how such activities trigger land degradation. Overall, the project aimed at building Mongolia's capacity to fulfil its commitment under the UNCCD and enabling Mongolia to prevent the progression of desertification in the already vulnerable river basin areas of Mongolia.

KEY PROBLEM AREAS THAT PROJECT AIM TO ADDRESS

Most natural resources management in Mongolia is relatively limited. Grazing is de facto open access. Nearly all of Mongolia's land-base, including pastureland, is publicly owned. Prior to 1991, grazing was regulated by a centralized system that maintained traditional nomadic patterns while regulating herd structures, grazing locations, and times. Approximately 70% of all livestock were owned by the State. After 1991, herds were completely privatized and most grazing regimes collapsed. Grazing is now defined largely by an open access system with retention of some traditional management practices and limited government oversight. Policies promote increased production and herd size.

Regulation and management of water resources is inadequate. Ground water extraction requires only a simple permit from the National Water Authority. Surface water use is largely un-regulated. Many surface water bodies are monitored for both quality and quantity and the Government is moving forward to support IWRM principles and practices. This includes fostering the development of River Basin Councils and supporting water resource use plans for 14 of 29 basins. River Basin Councils were authorized by a 2004 revision to the existing Water Law. The revisions allow for the creation of River Basin Councils to act as stakeholder advisory groups to forward the concept of Integrated Water Resources Management (IWRM). Basin Councils are voluntary and consist of representatives of water users and consumers, government, nongovernmental, and specialized or professional organizations.

Unsustainable agriculture and development practices already maximized Mongolia's natural resource use beyond sustainable limits. Mongolia's ecosystems do not have the resilience and reserves required to cope with any further stress. If current trends continue and unsustainable management practices persist, the vulnerability of Mongolia's rural communities will increase as climate change accelerates the deterioration of land and water resources and associated ecosystem services. The additional impacts represented by climate change will very likely dismantle Mongolia's already vulnerable ecosystem services.

The project will apply the principles of Ecosystem-based Adaptation (EbA) to increase climate change resilience at the landscape level. Ecosystem-based adaptation involves collective action among governments, communities, conservation and development organisations and other stakeholders to plan and empower local action that will increase environmental and community resilience to the changing climate. As per project document, barriers that project has to address succeed this project are:

- Absence of landscape level framework for internalising ecosystem resilience to climate change in coherent land use and water resources monitoring and planning system.
- Inadequate demonstrated experiences in ecosystem based adaptation approaches at the landscape level
- Weak institutional capacity and policy framework to promote ecosystem based adaptation approach.

Main conclusions, recommendations and lessons learned

Conclusion

1. The project was able to accomplish all targeted activities and only approval of Integrated Basin Management Guidelines and proposal of the two protected areas remained to be approved by the cabinet. But as these are very critical issues and are already approved by the local government Ministry has prepared to propose in the coming Cabinet meeting with priority.
2. To address the water related problems, the project intervened in four main areas: review and improvement of policies, awareness generation, infrastructure development with capacity enhancement and improvement of rural household economy. The policy development approaches included revision of policies and plans to incorporate climate change issues and water basin management issues.
3. River basin management guidelines were developed to address climate change issues and also development and green development plans and arrangement in policies water and climate change issues mainstream these in development activities.
4. Policy development and amendments were made for addressing and incorporating climate change issues.
5. To encourage evidence based planning, the project conducted studies on various subject including baseline information generation, economic studies of climate change and adaptation interventions, sustainable water harvest, mapping of glaciers and also strengthened meteorology stations in the field to have regular updates on weather, ground water level and river status and made these available to the local and national government officials.
6. Infrastructures facilities like water reservoirs and weather stations for regular weather information transmission and canal construction/repairing and green houses and well construction for irrigation in extended dry season were completed.
7. To address livelihoods of the people, the project trained farmers in advance irrigation and farming techniques, created reservoir, rain and snow water harvest facilities, protected springs and also provided training on various enterprises together with small grants to initiated income generation activities.
8. To decrease drudgery of women, relief pressure on the forest and to support local economy, project promoted bio-briquettes, solar energy, and water facilities.
9. Project changed concept of the local communities with increased knowledge on the climate change related threats and adaption techniques.

10. Project translocated Marmot, created water bodies for endangered birds and designed protected areas and arranged community protection for biodiversity conservation.
11. The EbA Project was designed with provision for appropriate management arrangements. The project team has managed to deliver a series of interventions that have reduced the threats of desertification.
12. The biggest challenges of absence of landscape level framework for internalising ecosystem resilience to climate change in coherent land use and water resources monitoring and planning system, inadequate demonstrated experiences in ecosystem based adaptation approaches at the landscape level and weak institutional capacity and policy framework to promote ecosystem based adaptation approach. These challenges were addressed through identification of policy gaps and addressing them, enhancing capacity by providing equipment and trainings to local relevant government institutions, establishing grassroots level institution and strengthening them to facilitate program implementation, establishing several demonstration sites and conducting exchange visits to provide first-hand information to community members and also for government representatives.
13. Project practiced adoptive management and lessons and recommendations were addressed on time to strengthen the implementation process. Project has been underpinned by good science and a technical approach of good calibre.
14. To make the outcomes and interventions sustainable, the project formed community groups, trained them in various technologies and on financial management, enhanced knowledge and capacity of local government. The community members and local government were made aware of the benefits of using weather information for farmers and pastoralists' decision making. The project successfully tested participatory planning and implementation approaches.

Recommendation

- I. The project target areas have a large numbers of livestock which supply large amounts of dung. The dung could be used for bio-briquette production. Project supported only one bio-briquette. Briquette production program could be supported in all areas of these soum to decrease pressure on wood for energy.
- II. The project developed integrated river basin management guidelines and also proposed two protected areas. These are approved by the local government and also approved by ministry. Follow up should be made to approve it from cabinet and thereafter by parliament.
- III. It is recommended to upscale and replicate lessons learned from this project by UNDP, Government of Mongolia and other agencies working in similar issues. There could be many potential donors willing to invest in such activities so it is also recommended that lessons learned should be disseminated to a large audience including other areas of the water basin and beyond. UNDP and AF could use its network for dissemination.
- IV. It is recommended to promote insurance mechanism in pastoralism and agriculture to safeguard farmers. Due to climate change weather became very unpredictable. If farmers whose economy is not so strong have to take risk of climate change then their situation will further worsened. Hence to encourage farming and pastoralism, insurance mechanisms should be promoted. Considering the economic situation of the farmers, premium of such insurance should not be high or be subsidised.

Lessons Learned

- I. Community organisations lack scientific knowledge and are ill-equipped for handling such projects so support to enhance their knowledge and strengthen their capacity will help to encourage them to continue in adapting risk of climate change or desertification and there by facilitate a cooperative approach for reducing damage from land degradation.
- II. Local adaptation knowledge is easily adapted by the rural communities. Local knowledge should be promoted together with scientific knowledge to respond to local situation as they are more easily adapted by the rural communities. Local communities were good in identifying signs of land degradation, climate change impact and proposing suitable and feasible mitigation measures. One example observed in project areas was that local community's knowledge regarding constructing dry well and snow water harvest to address prolonged dry season and linking this with resolving pasture and agriculture land issues.

- III. The farmer exchange visits promoted farmer to farmer learning and technology transfer from one community to another. This is the best way for transferring technology to farmers as farmers could explain by simplifying the technical terms more appropriately to another farmer making learning more effective.
- IV. Working directly through existing government structures brings dividends. The project chose to work directly with the Ministry of Environment and Tourism and local governments, rather than setting up parallel implementation structures. This decision has proved very successful not only in empowering government by providing experience and training, but also in developing effective government “ownership”, engagement, participation and motivation, thereby promoting long-term sustainability of the project’s achievements.
- V. Designing a project linking various institutions from grassroots level institutions, government agencies, local authorities and communities generates huge benefits for sustainability, and through the synergies developed provides the intervention with much greater effectiveness than that which can be achieved by stand-alone projects.
- VI. Local communities understand causes of pastureland degradation and environmental problems but due to lack of livelihood alternatives they are forced to continue unsustainable practices so if project designs consider alternatives for betterment of livelihood by improving their practices then locals will cooperate. The local communities understand and appreciate that the livelihood activities like coal and wood burning, overgrazing and poor water and soil management accelerate environmental degradation. They also showed willingness to change their practices if they are provided with alternative environmentally sound practices like water efficient agriculture and bio-briquette which support their livelihoods.
- V. Constant contacts with communities are vital to community-based water and land degradation risk management projects. Good communication and regular communication in relation to project activities with the communities helps to promote successful, community-based projects as they built trust and motivation of the targeted local communities.

More on Recommendations and Lessons Learned are given on pages 46-48.

I. Introduction

1.1 Purpose of the Evaluation

As per UNDP's guidance for initiating and implementing terminal project evaluations of UNDP supported projects that have received grant financing from the AF, this Terminal Evaluation (TE) has the following complementary purposes:

- To promote accountability and transparency, and to assess and disclose the extent of project accomplishments.
- To synthesize lessons that can help to improve the selection, design and implementation of future UNDP activities.
- To provide feedback on issues that are recurrent across the UNDP portfolio (E & E unit) and need attention and on improvements regarding previously identified issues.
- To contribute to the overall assessment of results in achieving AF strategic objectives aimed at global environmental benefits.
- To gauge the extent of project convergence with other UN and UNDP priorities, including harmonization with other UN Development Assistance Framework (UNDAF) and UNDP Country Programme Action Plan (CPAP) outcomes and outputs.

The guidance is designed to enhance compliance with both UNDP and AF evaluation policies and procedural requirements, which are consistent and mutually reinforcing, and use common standards. The guidance also responds to AF requirements to ensure that Terminal Evaluations of AF-financed projects should include ratings of project's relevance, effectiveness, efficiency, monitoring and evaluation implementation as well as sustainability of results (outputs and outcomes).

By adopting "UNDP's guidance for Conducting Terminal Evaluations of UNDP-Supported AF-Financed Projects", this Terminal Evaluation responds to both UNDP and AF requirements for Terminal Evaluations.

1.1 Scope & Methodology

This Terminal Evaluation (TE), carried out by independent consultants, was initiated by UNDP Mongolia as the AF Implementation Agency for the "Ecosystem Based Adaptation (EbA) Approach to Maintaining Water Security in Critical Water Catchment in Mongolia" project to measure the effectiveness and efficiency of project activities in relation to the stated objectives, and to collate lessons learned.

The TE was conducted over a period of 27 days between 25th August 2017 and 30th October 2017 by one International and one National consultant. The approach was determined by the terms of reference ([Annex I](#)) which were closely followed, via the itinerary detailed in [Annex II](#). Full details of the objectives of the TE can be found in the ToR, but the evaluation has concentrated on assessing the concept and design of the project; its implementation in terms of quality and timeliness of inputs, financial planning, and monitoring and evaluation; the efficiency and effectiveness of activities carried out and the objectives and outcomes achieved, as well as the likely sustainability of its results, and the involvement of stakeholders. The text has been revised to correct factual inaccuracies in the draft or to include additional information. All comments were addressed to ensure a fair hearing to all parties and responses to comments are listed in Audit Trail ([Annex XV](#)).

The evaluation was conducted through the following participatory approach to provide it with sufficient evidence upon which to base conclusions:

- extensive face-to-face interviews with the project management and technical support staff. Throughout the evaluation, particular attention was paid to explaining carefully the importance of listening to stakeholders' views and in reassuring staff and stakeholders that the purpose of the evaluation was not to judge performance in order to apportion credit or blame but to measure the relative success of implementation and to determine lessons learned for the wider AF context. Wherever possible, information collected was cross-checked between various sources to ascertain its veracity, but in some cases time limited this. A full list of people interviewed is given in [Annex III](#).

- face-to-face interviews with local stakeholders, particularly the community members, CBOs, local governments authorities, Ministries, NGOs, PIU and project field staffs;
- a thorough review of project documents and other relevant texts, including the Project Document, revised log-frame, and monitoring reports, such as progress and financial reports prepared for UNDP and annual Project Implementation Reviews (PIR), minutes of Project Board meetings, technical reports and other activity reports, relevant correspondence, and other project-related material produced by the project staff or partners; and
- field visits to project sites in Altai Mountains and Great lakes basin, Turgen and Khahiraa river basins and Ulz river basin in Eastern Steppe.

Wherever possible the TE Consultant has tried to evaluate issues according to the criteria listed in the *UNDP Monitoring and Evaluation Policy*, namely:

- Relevance – the extent to which the activity is suited to local and national development priorities and organisational policies, including changes over time, as well as the extent to which the project is in line with the GEF Operational Programmes or the strategic priorities under which the project was funded.
- Effectiveness – the extent to which an objective has been achieved or how likely it is to be achieved.
- Efficiency – the extent to which results have been delivered with the least costly resources possible.
- Results – the positive and negative, and foreseen and unforeseen, changes to and effects produced by a development intervention. In AF terms, results include direct project outputs, short-to medium term outcomes, and longer-term impact including global environmental benefits, replication effects and other, local effects.
- Sustainability – the likely ability of an intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally as well as financially and socially sustainable.

In general, the baseline indicators are very straight forward but quantitative information on use of surface water extracted for irrigation is lacking. These are consistent with the rationale of the project that there is a considerable knowledge gap, which the project intends to fill, or at least tries to contribute to the build-up of a science-based knowledge system. The objective of the project is to maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. The project seeks to achieve three outcomes:

- Outcome 1: Integrated strategies/management plans for target landscapes/river basins developed and under implementation.
- Outcome 2: Implementing landscape level adaptation techniques to maintain ecosystem integrity and water security under conditions of climate change.
- Outcome 3: Strengthening capacities/institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies.

The original logframe in the Project Document was revised significantly in June 2012 and amended in the inception report. This new logframe, comprising Three Components and nine Outputs, has been used throughout as the basis for this evaluation (see [Annex VI](#)), and the TE has evaluated the project's performance against these according to the current evaluation criteria provided to it by the UNDP. This is reproduced in Annex XIV for clarity. Project results were measured against achievement of indicators guided by evaluation questions (tracking tools, Annex XII).

In addition, other scales have been used to cover sustainability (Annex XIII-ii), monitoring and evaluation, and to assess impacts. The Review of Outcomes to Impacts (ROtI) method also requires ratings to be made for outcomes achieved by the project and the progress made towards the 'intermediate states' at the time of the evaluation. The rating scale is given in Annex XIII- iii while Annex XIII-iv shows how the two letter ratings for "achievement of outcomes" and "progress towards intermediate states" translate into ratings for the "overall likelihood of impact achievement" on a six-point scale. A rating is given a '+' notation if there is evidence of impacts accruing within the life of the project which moves the double letter rating up one space in the six-point scale. Comments/suggestions from reviewers are addressed and changes made are mentioned in the Audit Trail in Annex XIV.

The results of the evaluation were conveyed to UNDP and other stakeholders ([Annex III](#)). **Lessons learned** have been placed and further explained in page 46-48.

1.2 Constraints

The program sites within the provinces were very far from each other so it was difficult to visit many farmers' groups. The time given for evaluation was very limited and the TE team was not able to meet all of the Community groups. Financial information was available up to September end and remaining three months expenses was projected. Moreover, detail breakdown of the National Government's contribution for each component and for each year was not available to the consultants and this also limited financial analysis.

1.3 Structure of the Evaluation Report

The TE report is structured in line with UNDP's guidance and covers the following Sections:

- Project description and development context (this includes project design, its rationale and development context, the problems that project sought to address, the objectives, establishment of baseline, key stakeholders and expected results)
- Findings (Results of implementation and comparison with the targets asset)
 - Project Design / Formulation
 - Project Implementation
 - Project Results
- Conclusions, Recommendations & Lessons
- Annexes.

2 Project Description and Development Context

2.1 Project Start and Duration

The Project Document was signed on 13 April 2011 for the duration of six years. However, initiation of project implementation was slow in the beginning two years. Project activities were officially launched in November 2011 with the recruitment of a project manager and other staffs. The project was planned to end in October 2017. A Mid-term Evaluation was conducted in December 2014 – February 2015. Final evaluation was conducted between August – October 2017.

The key timelines which were planned for project implementation are shown in the Table below.

Key timelines planned for project implementation.

Key project's milestones	Date
Submission of Concept to AF	September 2010
Approval of the Concept by the AF Board	November 2010
Development of a Full Project Proposal	January-March 2011
Submission to AF of a Full Project Proposal	April 2011
Approval of Full Project Proposal	June 2011
Project activities launched	November 2011
Project Inception Workshop	June 2012
Mid-term Review Date	December 2014 – February 2015
Terminal Evaluation Date	August-October 2017
Original Planned Closing Date	October 2017

2.2 Problems that the Project sought to Address

Most natural resources management in Mongolia is relatively limited and grazing is de facto open access. Prior to 1991, grazing was regulated by a centralized system that maintained traditional nomadic patterns while regulating herd structures, grazing locations, and times. Approximately 70% of all livestock were owned by the State. After 1991, herds were completely privatized and most grazing regimes collapsed. Grazing is now defined largely by an open access system with retention of some traditional management practices and limited government oversight. Policies promote increased production and herd size.

Regulation and management of water resources is inadequate. Ground water extraction requires only a simple permit from the National Water Authority. Surface water use is largely un-regulated. Many surface water bodies are monitored for both quality and quantity and the Government is moving forward to support IWRM principles and practices. This includes fostering the development of River Basin Councils and supporting water resource use plans for 14 of 29 basins. River Basin Councils were authorized by a 2004 revision to the existing Water Law. The revisions allow for the creation of River Basin Councils to act as stakeholder advisory groups to forward the concept of Integrated Water Resources Management (IWRM).

Unsustainable agriculture and development practices already maximized Mongolia's natural resource use beyond sustainable limits. Mongolia's ecosystems do not have the resilience and reserves required to cope with any further stress. If current trends continue and unsustainable management practices persist, the vulnerability of Mongolia's rural communities will increase as climate change accelerates the deterioration of land and water resources and associated ecosystem services. The additional impacts represented by climate change will very likely dismantle Mongolia's already vulnerable ecosystem services.

The project will apply the principles of Ecosystem-based Adaptation (EbA) to increase climate change resilience at the landscape level. Ecosystem-based adaptation involves collective action among governments, communities, conservation and development organisations and other stakeholders to plan and empower local action that will increase environmental and community resilience to the changing climate. The project aims to address following barriers to address the management program related to river basin management:

- Absence of landscape level framework for internalising ecosystem resilience to climate change in coherent land use and water resources monitoring and planning system.
- Inadequate demonstrated experiences in ecosystem based adaptation approaches at the landscape level
- Weak institutional capacity and policy framework to promote ecosystem based adaptation approach.

2.3 Immediate and Development Objectives of the Project

The objective of the project is to maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. It believes that : i) the policy, regulatory and institutional environment support sustainable land and watershed management; ii) knowledge based planning forms basis for improving land and water management supporting sustainable natural resource use and pastoralism for sustainable economic development; iii) local economic development facilitated through diversification, value addition and alternative income will increase community resilience to climate change; and iv) effective project management and lessons used to up-scale land and water management.

2.4 Baseline Indicators Established

To measure the achievement of the project, baseline indicators were established and are as follows:

Objective: Maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes.

Outcomes and Outputs: Project had three Components and 9 outputs together. Outputs under each of the three outcomes are presented in section 2.6 (Expected Results, Page 6-8). To achieve these outputs several activities were identified and activities are described in “Achievement of Project Outcome and Output” (page 25).

2.5 Main Stakeholders

The project development process involved many stakeholders including government agencies and non-environmental organizations that are working in Mongolia. Consultations were held with the Ministries, communities, local governments and other relevant authorities in order to discuss the project concept and the site selection. The communities from the two project sites were also involved in the stakeholders’ consultations and community representatives participated in the discussions. As per the project document, the following stakeholders were planned to be included in the implementation process:

Stakeholder	Anticipated roles
Government entities	
Ministry of Nature, Environment and Tourism	Overall conservation of nature and implementing UNFCCC and UNCCD. It is Project implementing and its implementing agencies, Water Agency, Forest Agency, Specially Protected Area Administration will be main counterparts.

Ministry of Food, Agriculture and Light Industry	Main counterpart for pastureland management issues
Ministry of Mineral Resources and Energy	Main counterpart for mining and energy issues
Local Government (aimags and soums in the two target eco-regional landscapes)	Provides implementation support at the local level and ensures mainstreaming of local level policies
Administration for Land Affairs, Construction, Geodesy and Cartography	Main partner in land use planning and management
State Specialized Inspection Agency	Advising on and supporting enforceability aspects of legislations
River Basin Councils	Partner in ensuring water management and conservation activities are in line with watershed/basin management plans
Academia	
Mongolian Academy of Science and research institute	Institutes of Geo-ecology and Institute of Meteorology and Hydrology are partners in baseline and feasibility studies and continued monitoring of indicators
Communities and Private sector	
Communities	Project implementers and direct beneficiaries in the target watersheds.
National Meteorology Association	Potential partners in studies and developing land use and watershed management planning at a landscape level
National media	Information dissemination
Donors and NGOs	
IFAD, World Bank, Swiss Agency for Development and Cooperation, The Nature Conservancy, Wildlife Conservation Society, World Wildlife Fund	Technical inputs into the project formulation and implementation, Ensuring complementarities and synergies with activities of other on-going and future projects.

2.6 Expected Results

The project aimed to achieve its objective through three Components generated by a total of 9 outputs (3output under each Component).

Output level indicators were also developed for each of the output and are summarised as:

Component I: Integrated Strategies/Management Plans for Target Landscapes/River Basins Developed and Under Implementation

Output 1.1.: Ecological and Socio-economic Assessments (Baseline studies) as a basis for the development of Ecosystem-based Adaptation strategies for the target landscapes and for the development of River Basin Management Plans (Kharkhira/Turgen Ulz)

Output 1.2.: Economic Valuations completed comparing the landscape level costs and benefits of EbA.
Output 1.3.: Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (Khakhira/Turgen, Ulz) completed and operational.

Component II: Implementing landscape level adaptation techniques to maintain Ecosystem Integrity and Water Security under Conditions of Climate Change

Output 2.1. Capacities of rural communities for monitoring natural resources and climate change impacts and for adaptive management in two watersheds strengthened
Output 2.2. Suite of physical techniques to improve ecosystem resilience established in two critical watersheds.
Output 2.3. Regulatory and financial mechanisms for supporting climate change resilient livelihoods strategies.

Component III: Strengthening capacities/Institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies.

Output 3.1: Ecosystem-based adaptation approaches/integrated river basin management mainstreamed in national resource use planning and implementation mechanisms in sector policies
Output 3.2.: Institutional structure for river basin management integrating climate change risks (Administration and Council) established and operation in the target areas as model for replication
Output 3.3.: Best practices are identified and program for up-scaling best practices developed and implemented

As per the project document, project activities implemented in i) the Altai Mountains and Great Lakes Basin Eco-region; ii) the Eastern Steppe Eco-region; focusing on the Turgen/Kharkhiraa Sub River Basins – (Turgen, Ulaangom, Sagil, Bukhmurun, Khovd, Tarialan, Naranbulag soums of Uvs Aimag); and the Ulz River Basin – (Chuluunkhoroot, Dashbalbar, Bayandun, Bayan-Uul, Gruvanzagal, Choibalsan, Sergelen soums of Dornod aimag; Bayan-Adarga, Batnorov, Norovlin soums of Khentii aimag).

Table 1: Summary of expected global environmental benefits arising from the project

Component 1: Integrated Strategies/Management Plans for Target Landscapes/River Basins Developed and Under Implementation	<ul style="list-style-type: none"> The policy, regulatory and institutional environment supports ecosystem based adaptation to protect globally important watershed and grasslands. This also helps to protect birds and other species of global significances.
Component 2: Implementing landscape level adaptation techniques to maintain Ecosystem Integrity and Water Security under Conditions of Climate Change	<ul style="list-style-type: none"> Establishment of community capacity to monitor natural resources and climate change impacts and adaptive management of watershed will support Sustainable Land Management and strategic planning practices for reducing land and water degradation and this will help in environment protection and conservation of ecosystem and biodiversity of global significance. Developing strategy for knowledge management will support knowledge-based water and land use planning which will form basis for addressing climate change issues and support sustainable economic development. This improves land use and also household economy which will reduce dependency on natural resources of global significance. Knowledge management and dissemination in wide audience will help effective watershed management in similar situations of different parts of the world which help to address problem related to water, land and biodiversity management of global significances and also address climate change issues. Comprehensive approach of mainstreaming River basin management in national resource use planning and implementation mechanism of sector

	policies will address global environmental concerns and commitments in national development planning, with emphasis on livelihood improvement and consideration of gender equality issues.
Component 3: Strengthening capacities/Institutions to support EBA strategies and integrated river basin management, their replication and mainstreaming in sector policies.	<ul style="list-style-type: none"> • Local economic development facilitated through diversification, alternatives and value addition will improve livelihoods of rural communities strengthening resilient capacity. • Country develops and uses communities' support in watershed areas management contributing in environment protection, address climate change issues and conserve biodiversity of global significances.

Baseline indicators were fully established and the latter given in the Project Document ahead of the Project's commencement.

3. Findings

3.1 Project Design/Formulation

The project was designed to address the identified problem by developing strategy documents, generation of knowledge through research on biological, environmental, socio-economic and economic aspects, establishment of institution for river basin management, diversification of income generation and value addition for improving economic return to enhance resilience to climate change, capacity enhancement of communities to monitor natural resource and climate change impact and adaptive management of water sources, mainstream river basin management in national resource use planning, and implementation mechanism in sector policy, support development of water and pasture management and upscaling best practices identified. Project was aimed at reducing climate change risks to farmers and pastoralists by providing weather/climate information through meteorological observations and implementing various adaptation activities. The design of RRF was very clear with clear output milestones, activities for each output and SMART indicators to monitor implementation and achievements. The project was designed to work at both a macro level (national government scale) and a micro level (local government and community level). On the national level, it aimed to identify policy gaps and recommend legislative needs, develop policies for securing river basin and making development activities climate friendly. At the micro level it aimed to work at developing capacity of local government and community groups to address water, weather and livelihood related issues, generating awareness among farmers and pastoralists, facilitating decision making of local government and farmers based on weather forecasts, water harvesting to enhance crop productivity, forestry practices, alternative energy like solar and bio-briquette and diversification of livelihood options to improve household income and sustainable agriculture practices. The sites namely Altai Mountains and Great lakes basin, Turgen and Khahiraa river basins and Ulz river basin in Eastern Steppe were identified based on the information on vulnerability of the land and water resources.

The implementing and executing institutions were involved in the project from the project design phase and the design involved a thorough analysis of capacities of various partners and their interests. Project design incorporated lessons learned from several relevant projects in Mongolia and other countries. The roles and responsibilities of the implementing partners and other institutions were clearly defined in the project design. Hence to address the identified problem, the project was designed to apply the following approaches:

- (i) Institutionalize Policy framework and guidelines to address water and land management risk;
- (ii) Develop and systematically apply guidelines and criteria for water and land degradation to enable priority allocation of risk reduction efforts and investments;
- (iii) Engage with global, regional and national research networks and centres working on water and land issues;
- (iv) Develop EbA related knowledge management for supporting evidence based planning.
- (v) Establish and strengthen institution for river basin management.
- (vi) Strengthen community capacity to monitor natural resources and climate change impacts and adaptive management of watershed.
- (vii) Develop land use and pasture management plan.
- (viii) Mainstream river basin management in national resource use planning and implementation mechanism in sector policies.
- (ix) Strengthen rural economy by diversifying, value addition and addition of alternative income sources for developing climate change resilient livelihood.
Document technical knowledge and project lessons for use in future initiatives; and
- (ix) Disseminate project experiences to policy makers and development planners in Mongolia.

3.1.1 Analysis of Logical Framework

The log frame has a single development objective, 3 Components and 5 outcomes. The extensive activities are also listed in full, complete with their own indicators. The objectives, components and outputs are clear and appropriate to the issues and also designed considering the timeframe of the project. The project also utilised lessons from other projects (see in 3.1.3) and also the capacity of executing/implementing agencies was considered while developing project activities (see 3.1.4 & 3.1.8). Project design sufficiently analysed potential risks and assumptions (see 3.1.2) related to the project and it is well articulated in the PIF and PRODOC. Roles and responsibilities of the partners were made clear from the project design phase (see 3.1.8). The logical framework was revised during inception workshop in April 2012 which dropped one output of the component 2 from the original log frame. The revised log-frame includes 3 Components, 9 outputs and 10 main indicators.

The indicators of the log frame are relevant, precise and mostly SMART (Specific; Measurable; Achievable and attributable; Relevant and realistic; Time-bound, timely, tractable and targeted). All are based on sound scientific monitoring protocols using the most relevant measures for a given criteria.

3.1.2 Assumptions and Risks

There were five risks identified in the project document and all of them were ranked between 3 and 4 scale which is medium risk. During inception workshop, all risks were analysed and found that their magnitude is decreased due recent legal and institutional arrangements which created enabling environment for project implementation. All the risks and assumptions outlined in the project document were logical and robust. These helped to identify appropriate activities and required precaution measures to address the risks and assumptions. Arrangements for all risks and assumptions other than related to natural fluctuation were made and with these arrangements, the project was able to implement activities effectively to achieve the targeted results. One assumption that whether there will be government willing and able to finance project activities. Government suggested that user associations would contribute fees to the interventions. Recent amendment to the law on water provides for an institutional basis for integrated river basin management. Project assumed to receive support from government authorities and key stakeholders and involvement of local government authorities and key stakeholders helped project implementation with mutual consensus.

It is assumed that environmental risk from development of the extractive industry on land and open access to grazing lands, use of water and effecting water sources is possible. But government of Mongolia is going to introduce result-based M&E in all sector and this will help to address assumed risks.

3.1.3 Lessons from other Relevant Projects incorporated into Project Design

This project was designed with the lessons from the World Bank supported “Sustainable Livelihoods Program”, the GIZ “Mongolia Livestock Adaptation Project/Project for Market and Pasture Management Development” recently approved by GEF. The Livestock Adaptation Project, Green Gold Project, and SLPII contributed to implement activities such as the creation of herder groups, enhancement of fodder production, formulation of pastureland management plans, and opportunities for market improvements. Though this project up-scaled lessons from and coordinate very closely with these other initiatives, this project is the only one that is designed to explicitly focus on maintaining the resilience of ecosystem functions as an adaptation measure.

Within the Eastern Steppe region, three international conservation NGO’s (WWF, TNC, and WCS) are implementing a series of programs designed to address climate change and its impacts upon biodiversity values and water provisioning services. The project design consulted these organizations to

make certain the proposed project will be complimentary. These programs have generated substantial data about the region as well as formulated and implemented innovative adaptation techniques that lend themselves to EbA approaches. During the inception and implementation phase, the project worked closely with and benefit from these on-going efforts particularly with the design of EbA strategies, plans and demonstrations. Cooperation continued during implementation of activities of this project.

3.1.4 Planned Stakeholder Participation

At the project development phase, the project development team undertook extensive consultations with a wide range of stakeholders from national government bodies, non-government institutions, INGOs and local government bodies through a series of opinion polls, presentations, interviews, group discussions and workshops. These wide-ranging consultations were undertaken to ensure that stakeholders at all levels are aware of the project and its objectives and that they assist in the identification of threats of land and water degradation and potential institutions that could contribute to various activities of the project. A thorough assessment of relevance, experience and capacity of implementing partners and other stakeholders was also conducted. This assessment helped to utilise the strength of the implementing partners and to also develop capacity enhancement programs. Project design, criteria for potential sites and site selection was carried out with stakeholder participation. The communities from the project sites were also involved in the stakeholder consultations.

The project planned to be implemented following the UNDP National Execution (NEX) modality by Ministry of Nature, Environment and Tourism in close coordination with the other relevant Ministries and UNDP. Latter implementation modality was changed to NIM modality during 2014-15.

3.1.5. Replication Approach

Output activity had included an EbA monitoring, assessment and business planning. The business plan has detail protocols, responsibilities, and long-term financing needs and sources for the sustainable operation of the established monitoring and assessment program. The business plan considered linking the release of national government funding to the completion of Soum level monitoring and assessment. The plan detailed requirements for upscaling and replication to support Component 3. There is high demand of the EbA technique from other parts of the country. Project had collaborated with a press agency to publish its documents for awareness raising on climate change risks on a webpage to disseminate the lessons for further replication.

Mongolia approved a long-term development vision for the country (sustainable development concept of Mongolia till 2030) in February 2016. Its declared objectives are to increase economic growth, eradicate poverty, and reduce inequality; improve the business environment; and build a governance system that is professional, stable, participatory and free of corruption. This vision is anchored in the 2030 Agenda for Sustainable Development. UNDP also approved its country program (2016-2021) in 2016, which is centred on supporting implementation of the sustainable development goals and the realization of sustainable human development in Mongolia by translating the 2030 Agenda and the national development vision into Action. EbA project tested economic development, environment protection and securing environment services through active community participation. This approach is in line with the Agenda 2030 and also UNDP country program and could contribute to the vision. Since up-scaling of lessons from EbA project will help to achieve Agenda 2030's objectives like poverty eradication, increase economic growth, environment sustainability through participatory

approach there is possibility of replication of the lessons from this project in broader scale in Mongolia.

3.1.6 UNDP Comparative Advantage

During the inception workshop, UNDP's project assurance role was presented and discussed in detail. The participants endorsed the assurance role described in the approved project document. Enhancement of capacities at the national and sub-national levels has been considered by UNDP to be essential for promoting sustainable water and land management. Accordingly, and in line with the government's national priorities, support to enhance capacities and make planning evidence based in the fields of River basin management was also a priority area. The sustainable land and water management is deemed to be congruent with these priorities as elaborated in the Millennium Development Goal 7 where ensuring environment sustainability is the first priority programme areas for Mongolia; second, UNDAF priority for improved living conditions through environmental management for Sustainable Development and the third UNDP Country Program Action Plan (2012-2016). The project is in line with the pillars of technical and financial assistance which form the foundation from which risks of land and water degradation can be reduced in the Mongolia. Specifically, the project will help realise four pillars identified by UNDP:

- Development of the capacity of the rural population to adapt best adaptation practices on land and watershed management;
- Knowledge management to encourage evidence based planning;
- Engagement of communities and local government and NGOs to reduce risk of land and water degradation; and
- Networking with national and regional organisations working in the field of Ecosystem based Adaptation.

UNDP has been working in the field of environment protection, disaster risk reduction, SLM, biodiversity conservation, sustainable use of natural resources for economic development and poverty alleviation and adaptation/mitigation. UNDP has a lot experience from these areas. The project has benefited from UNDP's experience during the project development phase through to implementation. This project aimed to encourage national and local authorities and communities in Ecosystem based adaptation by enhancing their capacities for addressing climate change and land and water degradation. In addition, the project also aimed to establish knowledge base and provide economic development opportunity for rural communities. The project also benefited from UNDP in mobilizing additional funds, building capacity at the local level from its past experiences and supporting a policy review.

3.1.7 Linkages between Project and other Interventions within the Sector

The project has collaborated on the following interventions with other projects that share similar objectives and activities to create synergy for overall benefit to the country:

With WWF the project collaborated to organize trainings and awareness raising activities among officers of River Basin Administration on defining the river bed zone as it requires professional expertise. Provincial and soum level governments were highly appreciated to have the support.

With SPAN (Strengthening Protected Area) of UNDP project collaborated through sharing experiences and information on protected area proposal development and preparing application to the Ministry. SPAN project also supported identifying geographical area when EbA worked on interventions like

relocation of marmots. As it was successfully re-introduced communities now took initiative to protect and manage this particular species.

The project had worked with Ministry of Food, Agriculture and Light Industry to support small farmers to obtain tractors under soft loan agreement. Also seed for community greenhouse such as strawberry was identified and distributed to the local pilot areas was collaborated with the same ministry using their expertise and outreach services.

With TNC and WWF, the project collaborated on conducting the assessment of wetlands. The assessment aimed to amend to the “long named law” which is law on Prohibiting Mineral Exploration and Extraction near Water resources, Protected Area and Forests.

More particularly, with TNC the project collaborated to conduct the assessment of identifying the areas that need to be protected under internationally significant biodiversity (KBA). With the scope of work TNC worked in close collaboration with Mongolian National land Agency and UNDP. As a result of it over 1,1 million hectares of area in the Kharkhiraa and Turgen subriver basins was registered into the Land data base as a locally protected area, where no more exploration licenses will be given.

Best practices and experiences of EbA project is already being shared and taken into account by different newly proposed projects. For instance, UNDP/GEF, ENSURE (Ensuring Sustainability and Resilience of Green landscapes in Mongolia) project at its PPG stage is highly considering to use some of the approaches and activities used by EbA. For instance, the local communities got strong awareness raising through on-site activities about CBNRM and learned by doing that through conserving the local nature using different adaptation technologies can have an economic gain on harvest and yield animals in return.

The other newly emerging projects such as BIOFIN and ‘Improving the Adaptive Capacity and Risk Management of Rural Communities in Mongolia’ project of UNDP are learning from EbA project for their successful implementation.

For the use of alternative energy source in rural areas the solar water collector was installed at local hospital of Bukhmurun soum, Uvs aimag that is abled providing warm water for shower and washing rooms. In this case women are benefited more since most of hospital workers are women and most of users of shower room are baby expecting mothers.

3.1.8 Management Arrangements

UNDP National Execution Modality (NEX) was applied in the beginning but due to political transition during 2014-15 again it is switched to National Implementation Modality (NIM) to ensure broad stakeholder participation and to create both high flexibility and an enabling environment for innovation. The Ministry of Environment and Tourism (MET) was responsible for implementing UNDPCCC and water resource management and had the responsibility of senior supplier. MET was responsible for the timely delivery of inputs and outputs and coordinate with other responsible partners including line ministries, NGOs and local government authorities. The MET had also appointed the National Project Director. The ministry’s name was also change twice. In the beginning it was Ministry of Nature, Environment and Tourism (MNET), then it was changed to Ministry of Environment and Green Development (MEG) and then it was changed again to Ministry of Environment and Tourism (MET)

Project had a Project Board (PB) with responsibility of making management decisions for the project and play a critical role in project monitoring and evaluations to assure quality of process and products and use finding from the M&E for performance improvement, maintain accountability and upscale

learnings. The PB was composed of designated senior-level representatives of MET, Ministry of Food and Agriculture, UNDP and local Governor's Offices.

The project had a Project Management Unit headed by the Programme Manager who was responsible for the preparation of work plans and budgets and for supervising implementation of activities to deliver project results. The procurement of major inputs was directly done by UNDP on behalf of the project. Project had a National Project Manager with responsibility of ensuring the effective implementation for producing results specified in the project document without compromising quality within the specified time and budget.

Regular meetings were conducted to discuss progress and the constraints faced by the project. UNDP maintained quality technical and financial implementation of the project through its local office in Mongolia. UNDP CO also assured activity implementation, monitoring and ensured proper use of AF funds to assigned activities, timely reporting of implementation progress as well as undertaking of mandatory and non-mandatory evaluations. All services for the procurement of goods and services, and the recruitment of personnel were conducted in accordance with UNDP procedures, rules and regulations.

Project established technical committee which provided continuous technical feedback filling the technical gaps. Excellent reputation of NPC and PIU among all stakeholders was blessing to the project. Appreciation from the local government and presence of local coordinators was helpful in facilitating inter-sectoral collaboration and capacity enhancement on climate change adaptation.

The Project's management and implementation focused on the revised log-frame throughout. The project team made an effort to raise awareness and develop capacity amongst stakeholders to provide a solid baseline of understanding the project's main goals and activities. The roles and responsibilities of executing and implementing parties were made clear and negotiated prior to signing the project document. A thorough review of relevant legislations was carried out to assure an enabling environment for the project implementation. Similarly, agreement on co-funding was made before signing the project document and staff, equipment and logistics arrangements were in place by the time of initiation of the project.

3.2 Project Implementation

Two project sites Altai Mountains and Great lakes basin, Turgen and Khahiraa river basins and Ulz river basin in Eastern Steppe were selected by the project to implement policies, plans and investments that prevent soil degradation, maintain ecological integrity and support economic development of local communities.

3.2.1 Adaptive Management

The Project's adaptive management was good. The project was driven by the capable management team, backed by good decision-making by the Project Board, support and advice from the UNDP-CO. Adaptive management has operated effectively at both the strategic level and the tactical level.

As suggested in the inception report, economic valuation of the ecosystem based adaptation strategies was conducted. Also activities like EbA approaches were introduced in ongoing planning of Soum level land-use and annual pasture management plan.

A change in circumstances due to new amendment to the Law on Water led to further revision of Component 3. As the new legislation calls for establishment of Administrations and Councils for the river basins in Mongolia, and revised logframe adjusted to support the establishment and strengthening

of these institutions and enhance capacity of staff/member. Some minor adjustments to indicators were made during inception workshop.

The MTE made 22 recommendations (see 3.2.4) and positive responses were made to all of them. Recommendation to modify few target indicators was approved by the project board and forwarded to UNDP which sent it to UNDP-AF Regional Coordination Unit.

Most of the project activities including baseline study on biophysical and socio-economic situation were conducted within planned timeframe as this was stressed in Inception workshop. The project was designed to pilot in two areas based on the recommendation of the vulnerability assessments. Adoption of inception report recommendations and the recommendation from MTR by the project management is described under the heading “Feedback from M&E activities used for adaptive management”.

No major change was made in the project design and no new outputs were added but one output of component 2 was dropped and prioritisation of outputs was done according to recommendations from the MTR.

3.2.2 Partnership Arrangements

The UNDP CO provides technical and financial support and also fulfils the role of monitoring. The Ministry of Nature, Environment and Tourism is the lead implementing partner. It has the clear technical mandate related to EbA strategies, including knowledge of the international developments and networks related to EbA.

Ministries (Food, Agriculture and Light Industry, Mineral Resources and Energy) Local Government (Aimags and Soums in the two target eco-regional landscapes), Administration for Land Affairs, Construction, Geodesy and Cartography, State Specialized Inspection Agency, River Basin Councils, Mongolian Academy of Science and research institutes, Communities, National Meteorology Association, National Media are key partners of the project. Similarly, donors and NGOs like IFAD, World Bank, Swiss Agency for Development and Cooperation, The Nature Conservancy, Wildlife Conservation Society, World Wildlife Fund.

The project focussed efforts on building local capacity for Monitoring Natural Resources and Climate Change Impacts and adaptive management of river basin. The research findings and experience from working with local stakeholders provided the project with information for the formulation and amendment of legislations, development of guidelines for river basin management, EbA strategy document, knowledge management strategy and also increase household economy. Awareness generation, networking between community groups, exchange visits for knowledge sharing, involvement of various organisations specialised on specific technical fields related to the subject and involvement of local government staffs have significantly contributed to creating an enabling environment for the progress of the project. These capacity enhancements, commitment from government agency and policy back up is likely to make the project intervention sustainable in the long-term.

The project reached a wider audience through awareness generation through brochure distribution, media coverage, web-pages of UNDP and Ministry of Environment and tourism. The TECs found that stakeholder engagement and participatory approaches have been of good order throughout.

The project has worked closely with many stakeholders throughout and the active engagement of stakeholders has been vital to fulfilling its achievements, hence stakeholder participation is evaluated as **Highly Satisfactory**.

3.2.3 Gender

Women and children are the ones who are most vulnerable to climate change impacts. Baseline studies accounted gender in baseline studies. Project incorporated activities to address economic need of women particularly the women-headed households were properly addressed through enhancing and diversifying income generation from processing product and from horticultural products. Women were also provided opportunity to bring their voice and thoughts by involved in all committees and improved their skills in business planning. There are still room for further improvement of women's income level by improving access to more lucrative income generation activities. Similarly, assessing current incomes of women under current conditions and stock-taking exercise of income generation opportunities for women in rural areas would be helpful in developing and future implementation.

As already pointed out in MTR that vulnerability of women to low temperature was not adequately addressed by the project

3.2.4 Feedback from M&E Activities used for Adaptive Management

The project's adaptive management has been good throughout but monitoring technical aspects of the project was weak and feedback on such areas was weak.

The MTR made 22 recommendations and positive responses were made to all of them – the management response, justifications and actions were taken as follows:

3.2.5 Project Finance

The total project cost as per project document was US\$10,569,124 which includes US\$5,569,124 in cash and US\$5,000,000 in kind. Of these, the AF contribution was expected to be US\$5,069,124 in cash, UNDP contribution US\$500,000 in cash, and Government of Mongolia's (GoM) contribution US\$5,000,000 in kind. But as per the balance sheet provided by the UNDP, the total project cost (revised) was US\$13,674,108.74 including US\$5,569,091.74 in cash and US\$8,105,017 in kind (Table 2 and 3). Of these, US\$4,792,069.34 was as AF contribution with a UNDP contribution of US\$499,999.66 in cash. In-kind contribution from the Government of Mongolia was increased in the project document i.e. US\$8,105,017. If project spending is used as a basis of measure of the progress of implementation, then the Project has achieved most of the progress originally envisaged, only approval of one guidelines and two proposal (PA extension) were left and was on the process. Co-financing was well planned and clearly mentioned in the project document. Co-financing ratio and amount was changed latter while revising project finance. There was difference between committed contribution and actual contribution from the AF, UNDP as well as GoM. The UNDP as well as AF contribution was same as committed. Similarly, committed amount from UNDP was US\$500,000 but actual spent amount was and US\$499,999.66. The committed amount of Government of Mongolia was US\$5,000,000 while the actual contribution was US\$8,105,017 i.e. 62.1% more than committed amount. The executing and implementing agencies made close monitoring of financial transactions and program implementation.

- Project management costs were proposed at US\$480,000 and funded by AF, but actual cost covered by AF was 557,232.67 (97%) and UNDP US\$22,191.93(3%) while actual amount spent by Govt. of Mongolia in Management is not clear and it is believed that 100% contribution of the GoM was for management. AF contribution to management was increased and UNDP also contributed in management though it was not committed earlier. The actual management cost (US\$576,424.6) of the project was more than projected i.e. increased by nearly 20%;

- Project management costs comprised about 4.1% of the total spend. Original closing date of the project was October 2017 but it is going to be December 2017 as closing of some activities and administrative and financial work need some time. But this is not increasing any cost to the project.
- The project was co-financed by the UNDP and GoM. The final AF co-finance ratio in terms of monies spent was 1:1.7 (US\$5,069,092.08 (AF)) to US\$8,681,016.68 (UNDP+GoM), This is a very good result as AF requirement is at least 1:1 ratio;
- Spending on Component 1, 2 and 3 (US\$ 1,000,203.21, US\$3,194,769.5 and US\$796,694.43) accounted for 7.3%, 23.4% and 5.8% of the total spend respectively, while management costs (US\$8,681,441.6 i.e. 63.5%) was much higher than component 1,2 and 3. Government contribution was mainly management type so calculated in management cost.
- AF funding was distributed among all four components while UNDP funding was mainly allocated to component 1, 2 and 3 (Table 2) earlier but latter some contribution made for component 4 also. GoM support was through in-kind contribution and for implementation of activities (management). Of the total AF fund, 13.6% was spent on component 1, 61% on component 2, 15% on component 3 and 11% on component 4. UNDP funds were allocated mainly for component 1, 2 and 3 and small amount for 4 and of these comparatively less was spent on project management.

Table 2: Total disbursement of funds by output (projected to end December 2017) (US\$) against full project budget as per Project Document.

	AF			UNDP CO			Govt. Of Mongolia (co-financing in kind)			Total		
	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%	Budgeted	Actual	%
Component 1	500,000.00	687,246.2	137.45	394,000.00	313,957.01	79.68				894,000.00	1,000,203.21	111.99
Component 2	3,390,000.00	3,081,910.2	90.91	46,000.00	112,859.3	245.35				3,436,000.00	3,194,769.5	92.98
Component 3	699,124.00	742,703.01	106.23	60,000.00	52,991.42	89.99				759,124.00	796,694.43	104.95
Component 4 (Management)	480,000.00	557,232.67	116.09	0	19,191.93					480,000.00	576,424.6	120.09
Total	5,069,124.00	5,069,092.08	100	500,000.00	499,999.66	100.00	5,000,000.00	8,105,017.00	162.1	10,569,124.00	13,674,108.74	129.38

Source: UNDP CO MONGOLIA

Analysis of budgeted and actual expenditure shows difference in all components. Similarly, it is also observed that in some components (component 1 and 2, Table 3) less expenses made than budgeted but in some it exceeded. In the initial two years, due to slow implementation expenses was less than budgeted but in the following years covered some of the activities of the previous years and in some cases though activities started in the initial years payment was made in the latter years so latter years showed exceeded expenses than budgeted amount. The planned management cost as per project document was US\$480,000 and as per revised budgeted amount was US\$529,104.37 while actual management cost was US\$8,681,441.6. The cost increase a lot compared to budgeted in project document or revised budget.

Tables 3-5 show the disbursement of AF and UNDP funds. Breakdown of the GoM was not available but it was learned that GoM contributed in kind i.e. technical manpower for management of project implementation. GoM's in-kind contribution covers cost of office rooms in field offices and in center, cost of electricity, telecommunication, government staffs' salary, and costs of the time contribution by NPD and chair of the project board and district board members. UNDP's in-kind contribution covers costs of vehicles, fuel and maintenance of vehicles, PMU staff salary, office equipment, office running expenses including stationary, internets, board meetings and monitoring costs.

Personnel from all ministries involved in this project, local government and research institute, NGOs, UNDP CO, community based organisations and community members were found satisfied with some reservations and they were advocating achievement of the project. Ministry officials, local government

authorities, UNDP CO and local communities also expressed commitment to continue support to the project activities. Similarly, they also noted that the ministry as well as UNDP already has some projects which will complement some of the activities under this project and also replicate lessons learned. UNDP and government is also working on new project proposals to replicate lessons from these piloting.

TABLE 3: Total disbursement of AF funds (US\$) by Component by year against budget as per Project Document

	2012			2013			2014		
	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%
Component 1	235,000.00	166,664.92	70.92	86,500.00	7,834.98	9.06	42,750.00	251,626.71	588.6
Component 2	400,000.00	58,071.00	14.52	1,107,000.00	237,432.39	21.45	771,000.00	891,785.77	115.67
Component 3	92,000.00	119,409.01	129.79	142,500.00	116,613.01	81.83	123,000.00	241,697.49	196.5
Component 4	96,500.00	77,771.87	80.59	83,500.00	101,114.42	121.1	74,500.00	122,202.03	164.03
Total	823,500.00	421,916.8	51.23	1,419,500.00	462,994.8	32.62	1,011,250.00	1,507,312.00	149.05

TABLE 3: CONT..

	2015			2016			2017			Total		
	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%
Component 1	43,500.00	54,322.2	124.88	43,500.00	109,297.39	251.26	48,750.00	97,500.0	200	500,000.00	687,246.2	137.45
Component 2	585,000.00	1,022,334.88	174.76	264,000.00	548,766.16	207.87	263,000.00	323,520.0	123.1	3,390,000.00	3,081,910.2	90.91
Component 3	118,000.00	59,308.47	50.26	106,000.00	72,675.03	68.56	117,624.00	133,000.00	113.07	699,124.00	742,703.01	106.23
Component 4	75,500.00	103,760.11	137.43	74,000.00	78,090.24	105.53	76,000.00	74,294.00	97.76	480,000.00	557,232.67	116.09
Total	822,000.00	1,239,725.66	150.82	487,500.00	808,828.82	165.91	505,374.00	628,314.00	124.33	5,069,124.00	5,069,092.08	100

SOURCE: UNDP CO MONGOLIA

TABLE 4: Total disbursement of Government of Mongolia Co-financing (US\$)

	2012			2013			2014		
	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%
Component 1									
Component 2									
Component 3									
Component 4									
Total								8,105,017.00	

TABLE 4 (CONTD.)

	2015			2016			2017			Total		
	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%
Component 1												
Component 2												
Component 3												
Component 4												
Total		2,628,973			2,368,872			1,756,474		5,000,000.00	8,105,017.00	162.7

Source: UNDP CO MONGOLIA

TABLE 5: Total disbursement of UNDP funds (US\$) by Component by year against budget as per Project Document

	2012			2013			2014		
	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%
Component 1	177,000.00	145,537.53	82.22	46,500.00	167,419.48	360.04	42,000.00		0
Component 2	5000.00	22,011.28	440.23	11,500.00	89,848.02	781.29	6,500.00		0
Component 3	7000.00		0	12,500.00	52,991.42	423.93	9,500.00		0
Component 4		3,367.76			2,702.81			-7,815.64	
Total	189,000.00	170,916.57	90.43	70,500.00	312,961.73	443.92	58,000.00	-7,815.64	-13.48

Source: UNDP CO MONGOLIA

Table 5: Cont..

	2015			2016			2017			Total		
	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%
Component 1	34,500.00		0	43,000.00	0	0	51,000.00	1000.0	1.96	394,000.00	313,957.01	79.68
Component 2	6,500.00		0	6,500.00	0	0	10,000.00	1000.0	10.0	46,000.00	112,859.3	245.35
Component 3	15,500.00		0	6000.00	0	0	9,500.00	1000.0	10.53	60,000.00	53,991.42	89.99
Component 4		16,000.00						4,937.00			19,191.93	
Total	56,500.00	16,000.00	28.32	55,500.00	0	0	70,500.00	7,937.00	11.26	500,000.00	499,999.66	100.00

Table 3 shows the actual funds spent for each component by year for the AF funds. These show clearly that the management cost from AF i.e. component 4 exceeded budgeted amount in the years 2013 to 2016. UNDP didn't had provisioned management cost but except the year 2016, it contributed some in management. Component 1 funded by AF, peaked disbursement in 2014 and Component 2 in 2015. Component 3 funding by AF peaked disbursement in 2014 and component 4 peaked in the year 2014. UNDP funding for component 1, 2 and 3 were not made in years from 2014 to 2017 but only in year 2012 and 2013. Component 1, 2 and 3 funding by UNDP peaked disbursement in 2013, component 3 fund was not spend in 2012. No detail breakdown figures for GoM contributions for each components were available and assumed it is only for management i.e. component 4 and started from 2014. These expenses correspond to the work accomplishment in respective years.

Financial planning was not able to provide a real figure for each of the activities for different years. At all times, the chair of the Project Board has been kept abreast on the project's progress though good reporting and this has allowed the necessary budget revisions to be made on a sound basis. Similarly, the link between Ministry of Environment and Tourism and the UNDP-CO has been efficient in ensuring that budget replenishments have been timely.

Table6: Co-financing the project.

Co-financing (type/source)	UNDP own financing (mill. US\$)		AF (mill. US\$)		Govt. of Mongolia (mill. US\$)		Total (mill. US\$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants	500,000.00	499,999.66	5,069,124.00	5,069,092.08			5,569,124.00	5,569,091.74
Loans/Concessions								
• In-kind support					5,000,000.00	8,105,017.00	5,000,000.00	8,105,017.00
• Other								
Totals	500,000.00	499,999.66	5,069,124.00	5,069,092.08	5,000,000.00	8,105,017.00	10,569,124.00	13,674,108.74

Source: UNDP CO Mongolia

3.2.6 Monitoring and Evaluation: Design at Entry and Implementation

M&E Design

The project design included good monitoring and evaluation (M&E) plan which is comprehensive in its depth and scope. The project had a log-frame to monitor achievement and the log-frame had clear objectives, components and appropriate to the issues and also designed considering the timeframe of the project. Output targets were realistic to the budget and timeframe. A detailed survey was conducted following the standard scientific methods to identify the most vulnerable sites which helped to judge impact of interventions. Roles and responsibilities of the partners were made clear from the project design phase. The indicators of the log-frame were all Specific; Measurable; Attributable; Relevant, Achievable Realistic and Time-bound. At the stage of the inception, clarifications and updates were made to the M & E plan but no major change was made. MTR also did not make any changes to the outputs. All activities were listed and explained, and a table was included determining responsibilities, budgets and timeframe for each. M&E budgets were not set realistically, with a total proposed amount of US\$90,000 (Ninety Thousand) being set aside specifically for M&E activities. Baselines were already set in the Project Document. The inclusions of indicators for each activity were appropriate and useful for evaluation and also good for management purposes.

The design of M&E included fully itemised and costed plan in the Project Document covering all the various M&E steps including the allocation of responsibilities; but provision for monitoring of technical aspects and feedback mechanisms need improvement. Similarly targets were appropriate and realistic for the time frame, hence monitoring and evaluation design has been evaluated as **Highly Satisfactory**.

M&E Implementation

Monitoring and evaluation of project activities has been undertaken in varying detail at three levels:

- i. Progress monitoring
- ii. Internal activity monitoring
- iii. Impact monitoring

Progress monitoring has been good and was being done through quarterly and annual reporting to the UNDP-CO. The annual work plans have been developed at the end of each year with inputs from Project staff and the UNDP-CO. The annual work plans have been developed at the end of each year with inputs from project staff and the UNDP-CO. The annual work plans were then submitted for endorsement by the Project Board, and subsequently sent to UNDP for formal approval. The implementing team has also been largely in regular communication with the UNDP-CO regarding progress, the work plan, and its implementation. The indicators from the logframe were effective in measuring progress and performance. Project management has also ensured that the UNDP-CO received quarterly progress reports providing updates on the status of planned activities, the status of the overall project schedule, deliverables completed, and an outline of the activities planned for the following quarter. The reports' format contained quantitative estimates of project progress based on financial disbursements. The UNDP-CO generated its own quarterly financial reports from Atlas. These expenditure records, together with Atlas disbursement records of any direct payments, served as a basis for expenditure monitoring and budget revisions, the latter taking place bi-annually following the disbursement progress and changes in the operational work plan, and also on an *ad hoc* basis depending upon the rate of delivery.

From the quarterly reports, the UNDP-CO has prepared Quarterly Operational Reports which have been forwarded to UNDP/AF Regional Coordination Unit, and also uploaded all the information in ATLAS. The major findings and observations of all these reports have been given in an annual report covering the period July to June, the Project Implementation Review (PIR), which is also submitted by the Project Team to the UNDP-CO, UNDP Regional Coordination Unit, and UNDP HQ for review and official comments, followed by final submission to the AF. All key reports were presented to the Project Board members ahead of their half-yearly meetings and through these means, the key national ministries and national government have been kept abreast of the project's implementation progress.

The Project Management Office (PMO) and the UNDP-CO have maintained a close working relationship, with project staff members meeting, or talking with, CO staff on an almost daily basis to discuss implementation issues and problems.

The project's risk assessment has been updated quarterly by the UNDP-CO with the main risks identified along with adequate management responses and person responsible (termed the risk "owner"), who in most cases differs from the person who identified the risk.

A Mid-term Review (MTR) was undertaken in December-February 2015. The MTR made 22 recommendations (status discussed in adaptive management chapter of this report, page 14). The report contains formal ratings for different review elements. The report has also discussed efficiency, effectiveness, and sustainability, cost-effectiveness and replication aspects. A complete reading of the report returns an overview that the Project was considered to be on track in most of the activities.

Internal activity monitoring undertaken by UNDP CO, Ministry of Nature, Environment and Tourism and the Project Manager appears to have been good comprising a range of mechanisms to keep informed of the situation and to respond quickly and effectively to any areas of concern. These comprised many of the methods used to track progress, and implementation has been guided by the Annual Work Plan and the quarterly plans submitted to release funds. Generally the project was not in need of formalised communication or monitoring procedures as members being in almost daily contact. Unusually, impact monitoring has been well-developed, with formal protocols in place to measure the change in level of functioning of improved population of wildlife and coverage of forest, level of water and condition of pasture, increased in production and income from income generation activities, and change in awareness among community members. Undoubtedly this has arisen from the scientific background of the project design team, enhanced by the same of its technical staff and managers. As is most often the case, adaptive management of the project has been influenced to a much greater extent by external variables and overcoming the problems (or taking opportunities) that these have presented than by responding to internal monitoring.

M&E implementation has been satisfactory, with progress monitoring and internal activity monitoring. Responses have also been made to the mid-term review and the risk assessments (though some room for improvement in technical aspects of the activities remains) and the TECs considers it to be “best practice”, hence the implementation of monitoring and evaluation has been evaluated as **Highly Satisfactory**.

3.2.7 UNDP and Implementing Partners Implementation / Execution, Coordination and Operational Issues

Project Oversight

The project was implemented following National Implementation Modality (NIM) to ensure broad stakeholder participation and to create both flexibility and an enabling environment for innovation. The project execution was coordinated by the Ministry of Nature, Environment and Tourism in close coordination with UNDP. There was very good communication and coordination between implementing and executing agencies. Regular meetings were conducted to discuss progress and constraints of the project. UNDP had ensured high-quality technical and financial implementation of the project through its local office in Mongolia. UNDP CO was responsible for monitoring and ensuring proper use of AF funds, timely reporting of implementation progress as well as undertaking of mandatory and non-mandatory evaluations. All services for the procurement of goods and services, and the recruitment of personnel were conducted in accordance with UNDP procedures, rules and regulations. The project Management Unit was formed to coordinate and manage project activities and it facilitated the achievement of targeted results on time, adequate and appropriate management practices, program planning and proper implementation and timely reporting. PIU had one National Project Director, National Project Manager, Technical Advisor and support staffs (admin/finance staff, driver and office helper). A risk management strategy was developed involving all partners and experts through detailed analysis of issues and was effectively implemented. Local government provided office spaces in the field and also nominated Project Board members representing the local governments involved in the project. The project hired qualified experts to conduct studies and conduct demonstrations at sites levels.

The capacity of the communities and Institution established to manage river basin was enhanced for strengthening performance. Since MNET (now MET), other ministries and local governments institutions' involvement was on behalf of Government of Mongolian government ownership in the project was assured.

The technical management of the project was of the highest standards. The project has deployed expertise of the highest calibre, whether international or national, and 9 outputs/deliverables which have been developed have also been excellent, whether these were specialist material, e.g. various study reports, EbA strategy, knowledge

management strategy, development of land-use and pasture management plan, river basin management plan, database, brochures or legal documents, Policy Recommendations and EbA Guidelines.

The Project has been planned and managed (except in some cases which were delayed and remained incomplete) providing products of good quality and within budget, while responding effectively to several internal and external challenges through good adaptive management, hence the implementation approach has been evaluated as **Satisfactor**

UNDP Supervision and Backstopping

UNDP supervision was accomplished through standard procedures and undertaken competently. Terminal Evaluator received no complaints from interviewees about excessive UNDP bureaucracy or delays in procurement, and UNDP's heavy requirements for reporting.

Key aspects of supervision were made through UNDP's involvement in communication with the Ministry of Finance, Economic Development and Planning and other stakeholders. Members of the Energy and Environment Cluster of UNDP CO were heavily involved in regular issues such as the review and approval of work plans and budgets, review of progress and performance against such work plans, and completion of the tracking tools. It appears that the CO was helpful and supportive throughout the implementation period, responding adequately to provide good guidance, honest and constructive criticism, and help to overcome particular problems as necessary. UNDP support was focused towards achieving targeted results and support was appropriate, adequate and timely and the project staffs were satisfied by the quality of UNDP support. Annual planning was done on time with active participation of stakeholders. Similarly, risk management options were identified in close consultation of partners and experts and the project was able to manage risk efficiently. To avoid long bureaucratic process that delayed payment disbursements, and therefore delayed activity implementation, alternative ways to pay directly were made. The project was slow in the beginning but by changing the Project Manager improved implementation. Despite the slow start in the initial year, project accomplished all its targeted activities without compromising quality.

UNDP has provided an adequate level of supervision and backstopping to the project, and its performance has benefitted as a direct result, hence UNDP's supervision and backstopping role is evaluated as **Highly Satisfactory**.

3.3 Project Results

3.3.1 Overall Results

Attainment of Objectives:

The project continued to reducing land and water degradation risk by addressing policy gaps, enhancing capacity of the local government and community based institutions, generating awareness among community members from the project sites and supporting evidence based planning and mainstreaming river basin management in national resource use planning in sector policies. The following EbA related outputs were delivered:

- Developed 22 policies and plans including 3 IWRMPs and 2 EbA strategies.
- Mainstreamed IWRM plan in all key sectors and institutions (both public and private) involving water users at all levels.
- Facilitation of community-level adaptation planning.
- Facilitation of community participation in construction of physical structures like water reservoir, protection springs, construction of dams, well, canals, greenhouses, meteorological stations etc. Such direct involvement helped communities to have first-hand experience and therefore better understand what is required to address land and water degradation.
- Influenced National Climate Change Adaptation Programs for Agriculture, water and forest sectors.
- Contributed in establishment of River Basin Administration (RBA).
- Conducted studies on various subjects related to water basin management, sustainable utilisation of natural resources, capacity assessment (to develop capacity enhancement strategy), status and distribution of glacial, economy of EbA etc.
- Developed guidelines for management of water resources.
- Capacity of 9 soum units of the project were strengthened in the field of climate change, EbA, environmental monitoring and evaluation.
- Capacity and knowledge of 8 different fields of the local staffs was strengthened.
- Established various community groups on subjects like water user groups, sustainable agriculture groups, herders groups etc.
- Promoted inter-sectoral collaboration and also strengthened River Basin Councils (RBC).
- 44 natural springs were rehabilitated contributing 450,000ha pasture land improvement and decreased localised grazing pressure.
- 15 tree nurseries established. Forest management activities covered 811.4ha in Kharkhiraa, Turgen river basin and 1359ha in Ulz river basin.
- 23 engineered wells were repaired in Ulz river basin. These also contributed to endangered species such as White-necked Crane and Mongolian Gazelle in the eastern region. Of the repaired wells, 5 were equipped with solar pump.
- Water reservoir with various capacity were constructed, canals repaired/constructed dry well constructed/repaired, snow and rain water harvesting structure developed to support irrigation of agriculture, improvement of pasture land and providing water for livestock.
- Provided training on various enterprises and skill development and also provided small grant to initiate income generation activities.
- Implementation of activities that increase food productivity and income generation supported improved livelihood of local communities and contribution to poverty reduction that is often exacerbated by and leads to land and water degradation.
- Establishment of knowledge base (database) with access to planners to support evidence based planning which helps to mainstream EbA.
- Policy gap analysis was conducted and recommendations for policy review to incorporate NRM and Climate Change issues were made.
- Strengthening institutional capacities to implement policies and to support evidence based planning.

- Construction of rooftop water collection and reservoirs for community water harvest helps to address drought problem and help to reduce drudgery of women and improve production from livestock and agriculture.
- The availability of updated weather information will facilitate informed decision-making.
- Support to increased awareness among local communities and formation of community groups at local levels for supporting implementation of EbA will increase the sustainability of project outcomes and impacts.
- Piloted some rooftop solar heater in some houses.

A Summary of the Project's achievements is given below, followed by an outline of the attainment of objectives. This is followed by a Review of Outcomes to Impacts in Table 7 and a brief discussion on the verifiable impacts. A summary evaluation of Project Outputs is given in Table 8 followed by a more detailed description. A detailed evaluation of the level of achievements made against the indicators of success contained in the log frame is given in [Annex IV](#).

Summary of Achievements

Project results were measured against achievement indicators guided by evaluation questions (tracking tools, Annex XI). The EbA Project has been well designed, managed and implemented. The project team has managed to deliver a series of interventions that have reduced the threats of pasture land degradation and water scarcity and contributed to the improved livelihoods of local communities from the project provinces of Mongolia. In the process, the project has demonstrated some innovative approaches particularly in improved agricultural practices, water harvesting, weather monitoring, bio-briquette production for energy and income generating activities that could be expanded within the region or be replicated elsewhere in the country. One of its biggest strengths has come about through a design-decision to work directly with the community groups through the local government institutions rather than parallel project structures. Since the project is implemented by Ministry of Environment and Tourism (MET) involving ministry of Finance, Agriculture and Provincial and Soam governments, all government agencies are taking full ownership for most of the project's outputs/outcomes. Some very good work in the pilot sites brought benefits to many community members thereby laying a foundation for improved understanding of, and cooperation on, river basin management. As will be seen below, the achievement of the outputs and activities under each of the three Outcomes has been evaluated as **Highly Satisfactory**, and the evaluation of achievements against indicators (provided in [Annex IV](#)) show that all of the activities have been accomplished. The project helped to address threats to local communities from land and water degradation, and climate change through awareness-raising, strengthening capacity of relevant communities groups and institutions, promoted the use of weather information, water harvesting technologies, improved sustainable cultivation practices and supporting evidence based development planning.

Overall, the project has achieved many of its major global and local environmental objectives, and yielded substantial global environmental benefits, with minor shortcomings. The project can be presented as “good practice”, and hence its attainment of objectives and results is evaluated as **Highly Satisfactory**.

Key project achievements include:

The major outcomes of the project is generation of awareness or change in thinking (transformation) from local to the national level regarding issues climate change and seriousness of the impact and various solutions to address them, mainstreamed EbA in development planning through developing provincial level Green Development plans, created a knowledge base and facilitated access to it for promoting evidence based planning and development of policy framework to support EbA. Other Outputs are as follows:

A. Institutional and Financial Arrangements for Community Based DISERTIFICATION RISK REDUCTION (DRR):

1. Community groups established in both project provinces.
2. Enhanced knowledge and capacity of the local governments.
3. Enhanced knowledge and capacity of community groups.
4. Established separate women's groups in villages of both provinces.
6. Provided financial support to groups to initiate various enterprises that increase household income and strengthen resilience to climate change impacts.

B. Adaptation Structures in selected areas for Sustainable Natural Resource Management:

1. Water reservoirs constructed.
2. Rooftop rain water harvest and reservoir for rainwater harvest.
3. Bio-briquette production supported.
4. Solar technology for fruits drying introduced.
5. Green houses constructed for sustainable agriculture practices.
6. Dry well and engineered Wells constructed for extended drought situation. 5 of them were equipped with solar pump.
7. Irrigation canals constructed.
8. Snow and rain water harvesting structures constructed.
9. Meteorological stations established, equipped and staffs trained.
10. Permanent glacier monitoring station established and equipped.
11. Existing meteorological stations upgraded.

C. Non-structural interventions: (awareness raising, exposures, trainings, linkages development etc):

1. Conducted various trainings for awareness raising.
2. Conducted training programs to train locals on skills on various enterprises.
3. Various training for bio-briquettes production.
4. Awareness programs on climate change impact for decision makers and local communities.
5. Exposure visits to various sites to provide first-hand information to community members on various efficient water management and agriculture practises.
6. Conducted studies on various subjects related to Climate change, agriculture, economic aspects of adaptation programs, water harvest, glacier, protected areas, surface and ground water status etc.
7. Developed Green Climate Development plan for Provinces.
8. Several linkages development meetings were conducted with NGOs and line organisations followed by exposure visits to target project sites.
9. Conducted biophysical and socio-economic baseline studies at the project sites.

10. Conducted several capacity building activities (training on financial management, provided knowledge on water management, sustainable agriculture, marketing and also provided equipment) for women and men.
12. Supported eco-clubs of the local schools with awareness materials and also practical activities to generate awareness.

INTERVENTION AT THE LOCAL AND NATIONAL LEVEL

A. Activities with local, and National Stakeholders:

1. Conducted several coordination/consultation meetings.
2. At the beginning of the project to improve project component for implementation an inception workshop was conducted which refined indicators, approaches and also outlined specific activities.
4. Organised capacity needs assessment studies.
5. Strengthened Provincial and Soum level Local Government Environment Cells in project district offices.
6. Strengthened community groups.
7. Organised exposure visits (in country) for representatives of community groups and government representatives.
8. Prepared Provincial level and Soum level Green Development Plan for both project provinces.
9. Project manager participated in 23rd COP in Poland and also in Workshop on developing guidelines on flood prevention based on natural approaches in Netherlands and shared lessons from EbA project.

B. Intervention at the Policy Level:

1. Reviewed land conservation, land and water use and agriculture policies and recommendation developed.

C. Awareness, Communication and Documentation:

1. Awareness programs on local FM Radio and TV and in webpages.
- 2. Used print/electronic media for conducting campaign through news clips, articles etc.**
3. Uploaded program information on websites of UNDP, MET and other agencies involved in the project.
4. Lessons learned is being developed for distribution.
5. Produced project brochure and other publications and disseminated to various audiences/stakeholders.

The main problem areas identified by the TECs are:

- Ministries and Local Governments of both provinces expressed their support to project activities but funds were not committed to replicate lessons from this project to other areas;
- At the time of conducting the TE, no guaranteed commitment from any non-governmental/development partners was available to replicate lessons from this project to other vulnerable areas of Mongolia. But three proposals were being developed to upscale lessons from this project.

Objective Indicators

A single “Project Objective” was articulated in the log frame with a development objective. The overall project objective is to maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. The project aims to achieve its stated objective through three Components. Furthermore, during the log-frame’s revision, a series of 10 indicators were defined for 9 outputs. Full details and an evaluation of achievements against targets are provided in Annex IV. Project was able to accomplish most of the targeted activities (leaving few incomplete). The TECs believes this to be a creditworthy performance.

3.3.2 Relevance

EbA project is relevant with the Mongolia’s national policies and programmes. It contributes to manage and protect of pastureland, water and forest resources, rain and snow water harvesting and basin-based integrated water resources management. With the ecosystem based integrated approach contribute to sectoral programs and policies covering climate change adaptation, water management, forest management, biodiversity conservation, and combating desertification. The importance of these two landscapes are also stated in programme documents such as NAPCC, NAPCD and National Programme on water.

The 2010 State Policy on herders specially requires that Government to improve national preparedness to natural disasters and climate-related emergencies. MDD Goal 7 of Mongolia state to ensure environmental sustainability. The 2005 MDG-based National Development Strategy Section 3.5 calls for the creation of “a sustainable environment for development by promoting capacities and measures on adaptation to climate change, halting imbalances in the country’s ecosystems and protection them”. Strategic Objective 6 states: “promote capacity to adapt to climate change and desertification to reduce their negative impacts”. Mongolia also ratified the Kyoto protocol in 1993 and to fulfil its commitment government of Mongolia has initiated some activities. The National Action Programme for Climate Change was also updated whose objective 2 ask to ensure ecological balance and reduce socio economic vulnerabilities and risks step by step through strengthening of national adaptive capacity to climate change. EbA programs are in line to these commitments and also support achievement of the 2010 National Programme on Water Section 3.2.10 which states “Determine impacts of climate change and land use to the water ecosystem in large river basins, ecosystem biological indicators and monitor according to the international standards”. Project is also in line with the 2010 NAP for combating desertification, the Alai Mountains Biodiversity Conservation Strategy and the Eastern Steppe Biodiversity Conservation Strategy, the Government Plan of Action, the National Adaptation Strategy and the National Biodiversity Strategy and Action Plan.

The project intervenes to reduce land degradation, contribute to human lives and property and safeguard critical river basin of Mongolia and is congruent with GEF and national priorities, and remains pertinent in light of the current levels of threats; hence it is evaluated as **Relevant**.

3.3.3 Effectiveness and Efficiency

Cost-effectiveness

The UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported projects defines the criteria of “efficiency” as:

“The extent to which results have been delivered with the least costly resources possible; also called cost effectiveness or efficacy.”

The project has not exceeded the budgeted figures and all of the planned deliverables were completed by the time of terminal evaluation so the cost-effectiveness is satisfactory. Activities of all three components were accomplished without exceeding the budgeted amount and achievement indicates no lack of quality. Publication of few good practices, approval of Integrated Water Resource Management (IWRM) plan and proposal of two protected areas are due but project personnel have done their job efficiently and completed all preparation and submission of guidelines and proposals and lobbying for approval is done well and as a result it is in the priority list of the coming parliament session. Overall management cost is more than initially budgeted and this could be due to shortcoming in calculation of some management costs. Total expenses of the project were 100% of the total budgeted amount and some additional expenses (US\$3,104,984.74) also took place mainly in management but this is due to additional management expenses which is born by the GoM and beard by the GoM. Hence project is highly cost effective.

Project generated support from the government which helped to reduce cost of project office space in the field and the project also used national consultants to provide technical advice, helping to reduce the cost of project management that otherwise could be very high. Involvement of local communities in implementing project activities helped to increase their knowledge and skills. Income from project activities and water harvesting improved the livelihood of communities comfortable. Construction of rooftop and reservoir water harvest and replacement of coal and wood use by bio-briquette reduced drudgery of women and herders that helped to generate interest of government and other like-minded institutions to be involved in such activities.

The project was able to achieve several of expected outputs, and cost-effectiveness has been a priority of the implementing agency throughout, amongst their priorities. This, combined with significant levels of additional co-financing leveraged by the project's activities, means the overall cost-effectiveness of the project has been Highly Satisfactory, hence it is evaluated as **Highly Satisfactory**.

The project was able to achieve expected outcomes and objectives. Evaluation team evaluated the achievements following the log frame indicators (revised indicators) and judged achievement effectiveness in activities and efforts made by the project team efficiently. The initial delays in implementation were caused by initial preparations. Stakeholders expressed satisfaction with the accomplishments of the project and are of the view that the project will have significant impact and will meet its objectives.

The project has facilitated changes in management practice and development planning processes and has increased the level of awareness about the long term positive impacts of EBA, especially in the context of climate change. Similarly, project delivery modalities have been efficient and project has been able to contribute to the AF and UNDP objectives and also to national priorities. Since some of the interventions of the project showed impact (impact on planning processes, impact in policy amendment and formulation, development of green development plan (GDP) by provincial governments, increase in household income, increased availability of water during drought periods, increased awareness on cause of environmental problems, reduced use of firewood, development and approval of local managed protected areas, increased in population of the translocated Marmot etc.) while others are yet to show impact, the effectiveness of the project is rated as **Highly Satisfactory**.

The project followed standard scientific methods and used qualified, experienced and dedicated technical manpower which made implementation of activities efficient and helped to achieve many targets on time and with quality outcomes.

The project maintained good relations with all stakeholders and worked in close cooperation and this helped to execute activities efficiently with their cooperation and also made impact effective.

3.3.4 Impacts

Table 7 provides a review of the likelihood of outcomes being translated into intended impacts.

TABLE 7: Review of outcomes to impacts at the end of project situation

Component	Findings	Review of Outcomes to Impacts
Site Level Outcomes		
Component 1: Landscape level integrated land use and water resources monitoring and planning system focused upon reduction of ecosystem vulnerability to climate change.	<ul style="list-style-type: none"> • EbA strategic priorities implementing in Eastern Steppe and Great Lakes Depression ecoregions -2 (includes Eastern and Western target sites) • IWRM plans -3 (Ulz river basin, Uvs lake Tes river basin and Kharkhiraa Turgen sub river basins) • 10 agencies in total (2 River basin administrations, 3 Meteorological Agencies, 3 Environment and Tourism Agencies, 2 Protected Area Administration at Aimag level) • The project developed an amendment reflecting CC trends, its vulnerability and risks to the existing guidance “Methodological guidance to develop IWRM plan” and submitted to Ministry of Environment and Tourism (MET) for further discussion in 2015. The issue was discussed at National workshop of RBAs which was held on 25-26 May, 2016. • Total areas: 2,150,530.71 ha • 1. Proposals to include 3 areas mostly covering upstream of rivers and lake into protected areas network under State protection (567,433.22ha) were submitted to MET in 2014. The proposals were discussed and approved by the Counsel of MEGDT in May, 2016. (it is expected to submit soon to Parliament for approval) • 2. Proposals of 19 areas under local protection (1,015.665.17 ha) were developed and approved by Local Parliament of 15 soums and registered in a State database. As a result of protection, no mining is permitted in protected areas, including areas surrounding any source or future source of water supply that have been protected by regulation. • Altai Mountains / GLB: 1,022,981.17 ha • Dornod steppe: 95,403.0 ha • Ulz river basin: 102,563.32 ha 	AB: Likely

Component	Findings	Review of Outcomes to Impacts
<p>Component 2: Landscape level adaptation techniques maintaining ecosystem integrity and water security under conditions of climate change.</p>	<ul style="list-style-type: none"> • Under the consideration of soum specific characteristics of ecology and socio-economic conditions, EbA Plans for target 17 soums were developed in cooperation with local representatives in order to include in the plans adaptation measures to increase disaster preparedness to and reduce loss and consequences of natural disaster and more in generally adapt to CC and maintain ecosystem resilience. • 17 soum level EbA action plans are in implementation. • Totally 44 springs rehabilitated in target river basins • Water flow Length of rehabilitated springs was increased by 0.5-1.5km in average. • Fuel consumption was decreased by 20% through the instalment of monitoring system (manometer, thermometer, safety valve) on 65 heat-only boilers in target 17 soums. • Decreased by 20-40% in average in 23 pilot sites covering 41.5 ha. • +Accumulated water in reservoir/ catchments-31854 cubic meter • b) Monitored/efficient wells as of 2017: <ul style="list-style-type: none"> • Western sites (Kharkhiraa/Turgen)-14 • Eastern sites (Ulz)- 20 wells respectively • Engineered water harvesting structure-1, • Traditional water harvesting structure-2, • Rehabilitated channels-2, • Dry well-1 • b) Total hectares restored riparian/wetland as of Sep 2017: <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 1,310ha • Ulz: 2,270ha • Kharkhiraa, Turgen: 20ha • Ulz: 24ha • c) Total hectares with EBA grazing practices as of Sep 2017: <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 155,000 ha • Ulz: 1,995,000 ha • 290 ha as of Sep 2017. • 20 household's annual income from the 102 poor families was increased up to above living standards. It constitutes 19.6% decrease in number of households below living standard (Monthly income increase) • Currently 102 Small Grantees and 60 community groups engaging tree nurseries, wool & wood production, ecologically oriented farming etc. are cooperating with the project. • Hydrological monitoring strengthened by: <ul style="list-style-type: none"> • Establishing Glacier monitoring post -1 • Establishing Surface water monitoring posts -3 • Establishing Ground water monitoring posts -3 • 	<p>AB: Likely</p>

Component	Findings	Review of Outcomes to Impacts
Component 3: Institutional and policy capacity strengthened to support Ecosystem-based Adaption replication, planning, monitoring, and enforcement for critical watersheds	<ul style="list-style-type: none"> • Glacier and snow depth monitoring system introduced & operational -1 • Uvs lake-Tes RBA & Ulz RBA established & strengthened - 2 • RBCs established& strengthened - 3 • Trained staffs of relevant relevant agencies in 21 Aimags, and members of existing river basin councils, and staff of newly established river basin administrations-645 in overlapping number • 25 policy documents revised and amended to consider mainstraing EBA: <ul style="list-style-type: none"> • EbA strategic priorities-2, • IWRMP-3, • EbA soum action plan-17 • Proposal on extension PA -3 • Since 2014, the government spent 1,781,000US\$ for implementing IWRM and EbA measures in 2 target river basins. • EbA strategic priorities-2, IWRMP-3, 	BB: Likely

TECs found local people very much aware of the climate change impact and also sustainable management of water resources. Also the local and central government officials were very much sensitized on the issues of water basin management and made future plans and programs to address water basin management and green development. Awareness generated among the community members was resulted in them planting trees, protecting springs, proper management of water, practicing sustainable agriculture methods and participation in sustainable and environment friendly activities. This project also helped to initiate coordination between different government agencies and community organisations which is very important for promoting an integrated approach and helps to bring together expertise from diverse fields. Similarly, TECs observed that water saving techniques were helping to reduce use of water and becoming adopted by many households, water harvesting helped to resolve water scarcity and reduced localized grazing by livestock and yielded and income increased from the sustainable agriculture practices and handicrafts promotion helped to improve household economy, livelihoods and also built leadership among the women. These indicate that the expected impact is taking place in the project areas.

Implementation of SLM activities in each project site, increased awareness among the local government and community based organisations and helped to initiate evidence based management (using information on weather and information from baseline study) that help to address water related problems, degradation of pasture lands and risks to agriculture practices. During field visits, TECs observed awareness among local communities and local government and CBOs conforming impact of these interventions to improve status of sustainable was and ecosystem management.

Implementing EbA activities through communities increases awareness and builds capacity and improves the likelihoods of sustainability of initiatives.

Documentation and dissemination of information on EbA best practices helped to share knowledge for benefit of large population from various countries with water related risks. Similarly, improvement in legislation addressing water basin management issues will help to mainstream EbA in development practices for mitigation of such risks.

As a result of the review of outcomes to impacts, the overall likelihood of impacts being achieved is all **Likely**, hence the project is expected to achieve most of its major environmental objectives, and yield satisfactory environmental benefits by managing land degradation risk and its effectiveness is evaluated as **Highly Satisfactory**.

3.3.5 Achievement of Project Output & Outcome

This section provides an overview of the main achievements of the project. Considering the results achieved under each of the outcomes, and the progress towards the overall objective, the project effectiveness is rated as Highly Satisfactory. The EBA project generated numerous significant results, meeting several of the planned accomplishments. The project objective was stated as “*Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia*”

Based on the respective indicators and overall level of progress toward the three outcomes, the outcomes rating are as follows:

TABLE 8: Evaluation of the end of project situation as per the revised log frame

Component	Evaluation*					
	HS	S	MS	MU	U	HU
Component 1: Integrated Strategies/Management Plans For Target Landscapes/River Basins Developed And Under Implementation						
Output 1.1: Ecological and Socio-economic Assessments (Baseline studies) as a basis for the development of Ecosystem-based Adaptation strategies for the target landscapes and for the development of River Basin Management Plans (Kharkhira/Turgen Ulz)						
Output 1.2 Economic Valuations completed comparing the landscape level costs and benefits of EbA.						
Output 1.3: Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (Kharkhira/Turgen, Ulz) completed and operational.						
Component 2: Implementing landscape level adaptation techniques to maintain Ecosystem Integrity and Water Security under Conditions of Climate Change						
Output 2.1 Capacities of rural communities for monitoring natural resources and climate change impacts and for adaptive management in two watersheds strengthened						
Output 2.2 Suite of physical techniques to improve ecosystem resilience established in two critical watersheds.						
Output 2.3: Regulatory and financial mechanisms for supporting climate change resilient livelihoods strategies.						
Component 3: Strengthening capacities/Institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies.						
Output 3.1 Ecosystem-based adaptation approaches/integrated river basin management mainstreamed in national resource use planning and implementation mechanisms in sector policies						
Output 3.2 Institutional structure for river basin management integrating climate change risks (Administration and Council) established and operation in the target areas as model for replication						
Output 3.3 Best practices are identified and program for up-scaling best practices developed and implemented						

* Note: HS = Highly satisfactory; S = Satisfactory; MS = Moderately satisfactory; MU= Marginally unsatisfactory; U = Unsatisfactory; HU = Highly unsatisfactory.

The project supported community based- river basin management and climate change risk management by incorporating activities like policy reform, evidence based planning, infrastructure development, awareness generation, capacity enhancement of institutions involved in EbA, reducing energy consumption, increasing agricultural yields and improving household economy and decreased land degradation. It also applied in three pilot provinces (aimags) and successfully demonstrated a participatory approach of implementation with cooperation from government staff and local to national institutions. Most the project outputs are ranked individually as **Highly Satisfactory**; hence overall the achievement of outputs and activities is evaluated as **Highly Satisfactory**. Many of the project outcomes are also achieved as per planned, hence achievement of outcomes of the project is also rated as **Highly Satisfactory** and overall project is also rated as **Highly Satisfactory**.

Component1: Landscape Level integrated land use and water resources monitoring and planning system focused upon reduction of ecosystem vulnerability to climate change:

To achieve the component 1, project had identified three outputs. Activities and achievements of outputs are listed below

Output 1.1.: Ecological and Socio-economic Assessments (Baseline studies) as a basis for the development of Ecosystem-based Adaptation strategies for the target landscapes and for the development of River Basin Management Plans (Kharkhira/Turgen Ulz).

Project completed all the planned baseline studies. The following are the assessments, studies conducted and guidelines developed by the project:

- Baseline inventory/assessment (ecological and socio-economic) in the Ulz river basin and Kharkhiraa, Turgen sub-river basin
- Feasibility study for establishing water harvesting catchment for glacier melt.
- Soum level capacity assessment
- Assessment of Institutional Capacity of key agencies
- Climate change-vulnerability and risk assessment in the Eastern steppe landscapes, Mongol Daguur and Great Lakes Depression, Altai Mountains
- Feasibility study on ecosystem based adaptation measures to be undertaken in the Ulz river basin and Kharkhiraa, Turgen sub-river basin
- Study on Permafrost distribution of Mongolia (1:1 000 000)
- Design drawing and budget of traditional water harvesting structure
- Design drawing and budget for engineered small scale water harvesting catchment
- Design drawing for roof water collecting
- Guideline to spring protection
- Guidebook for WUG (Water users groups)

Main findings of these assessments were used to develop proposals for the application to establish new protected areas. The proposed protected areas and their areas are as follows:

- Khukh lake (95,403.9 ha),
- Upper stream of Tes river, Kharkhiraa and Turgen sub river basin (41,771 ha),
- Upper stream of Ulz river (102,563.32 ha).

In cooperation with MEGD this project developed a science-based “Permafrost distribution map” with scale 1:1000 000.

Output 1.2.: Economic Valuations completed comparing the landscape level costs and benefits of EbA.

The economic valuations comparing costs and benefits of EbA is completed for Stage I and II study and Stage III study report will be submitted within this month and review will complete in the remaining time of the project. The project is expected to receive the final product by October, 2017.

- Economic valuation; Stage I: Economic valuation of the ecosystem services and natural resources under climate change conditions in the Kharkhiraa, Turgen and Ulz river basins (phase I)
- Economic valuation; Stage II: Cost and benefit analyses (CBA) to assess impacts of ecosystem based adaptation measures
- Economic valuation; Stage III: Methodological guidance of identifying environmental, social and economic impacts of EbA measures in project in target eco-regions and mainstreaming best practices

Output 1.3.: Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (Khakhira/Turgen, Ulz) completed and operational.

22 policy plans were developed and are operational, including 3 IWRMPs and 2 EbA strategies for 2 target basins and 17 Soum. EbA programs were developed providing plans for adaptation measures on the landscape level for each target areas.

The project mainstreamed IWRM plans in all key sectors and institutions (both public and private) involving water users at all levels, so that one Integrated Water Resource Management (IWRM) plan was officially adopted by all three target Aimags. The IWRM plan of Uvs lake – Tes River is approved by the Ministry of Environment and Green Development (MEGD) in compliance with the Article 4.8 of the “Law on Water” and submitted to cabinet for approval. After cabinet approval this will be send for approval by the parliament. Furthermore, concrete legal, institutional, financial and technical measures were defined for ensuring water security.

The outputs has achieved almost all of its major targets, and yielded some global environmental benefits, without shortcomings. These outputs can be presented as “best practice” and is rated as **Highly Satisfactory**. The project has accomplished most of the activities that were required to make EbA management sustainable by providing a viable long-term security to livelihoods and local ecology from climate change impacts; hence the outcome achievement is rated as Highly Satisfactory.

Component 2: Implementing landscape level adaptation techniques to maintain Ecosystem Integrity and Water Security under Conditions of Climate Change

To achieve the component 2, project had identified three outputs. Activities and achievements of outputs are listed below:

Output 2.1. Capacities of rural communities for monitoring natural resources and climate change impacts and for adaptive management in two watersheds strengthened

Capacity of local coordinators from 9 Soum units of the project was strengthened in the fields of climate change, EBA, environmental monitoring and evaluation. This helped to prepare human resource to work as environment expert at the local level.

Capacity and knowledge of the local staffs was strengthened in 8 different fields through 36 trainings. Similarly, more than 60 journalists also received this kind of training and joined advocacy events and received knowledge on climate change adaptation, EbA measures, IWRM, effective and efficient water use and water resource increase. After training and other events, journalist disseminated knowledge to general public through electronic and printing Medias.

Established Water User Groups (WUG) to establish sustainable means of protection, use and management of water resource in Ulaangom, Tarialn, Naranbulag soums of Uvs aimag and BayanDun Soum of Dornod aimag.

Output 2.2. Suite of physical techniques to improve ecosystem resilience established in two critical watersheds.

Spring protection: Total of 44 natural springs were rehabilitated with the project support. It helped to make clean water available for the local community and also livestock. This also helped herders to move back to their previous locations as this helped to abandon almost 450,000ha pasture land with flow of clean water. Approximately 10,000 rural population with 490,000 livestock benefitted from this activity. This helped to protect approximately 120,000ha important riparian zones from excessive grazing impact. Regular monitoring on streams, water quality, vegetation and use of springs, water points and wild animals is being conducted since 2014.

Agriculture activities: 15 small scale tree nurseries covering 25ha areas were established in cooperation with local EbA community groups. More than 300 locals trained through series of on-site trainings on tree and strawberry planting, greenhouse farming, irrigation technologies etc. The project trainers and local adaptation groups actively involved in these programs. Similarly, several reforestation and forest management activities covering 811.4ha in Kharkhiraa, Turgen river basin and 1359ha in Ulz river basin were conducted in target areas with the State funding.

Rehabilitation of wells: A total 23 engineered wells were repaired in Ulz river basin. Wells for repairing were selected based on their location of importance for endangered species such as White-naped Crane and Mongolian Gazelle in eastern region. Through repaired wells, a total of 10,000 ha of abandoned and remote pasture emerged to be re-used for livestock husbandry and a total of 138,000 ha were freed for grazing of wild animals. The number of beneficiaries are more than 103 herders.

Surface water accumulation: Small scale water reservoir with the volume of 18854cubic meters was constructed in Bayandun Soum of Dornod to irrigate 10ha of agricultural lands. The rain and snow water harvesting small reservoirs constructed on the west bank of Turgen River which can provide water for livestock in dry season. Water channel in Sagil soum of Uvs aimag was repaired for efficient water supply and this provide water to over 20,000 livestock of 80 households and also helped to improve 3400ha of degraded pasture land. Similarly, an innovative water reservoir called “dry well” with capacity of 55tonnes was established in Naranbulag soum of Uvs aimag to collect snowmelts and rain water. This (dry well) will be used to address water shortage during intensive irrigation period for 3 households (~3 ha). A traditional water reservoir of 9000 cubic meters capacity was constructed in Batnorov soum of Khentii aimag in Ulz river basin with local co-funding for snow and rain water harvesting and irrigating 12ha agricultural area during extended dry season without affecting its natural flow.

Output 2.3. Regulatory and financial mechanisms for supporting climate change resilient livelihoods strategies.

Project conducted 21 trainings on processing wool and making woolen products to enhance skills of 300 local women. Similarly, project also conducted 7 trainings on handicrafts and small household items making (device for ritual milk and tea offering, pastry mold etc.) from wood and 205 people benefited from this training.

Project also initiated small grand program to improve and diversify the local livelihoods of local communities through income generation in all target soums and surrounding areas during 2014-2017. Similarly, 102 small projects are being implemented by local institutions including adaptation groups, cooperatives, environmental

NGOs to improve agricultural production and increasing water use efficiency and restoring ecosystem resilience through rehabilitation of riparian area and reforestation.

Value added-eco felt product “Sonohon” brand was newly released.

Greenhouses with the area of 45x120m² were built with support from the project. Mainly women headed households were given priority in this program. With introduction of strawberry and other vegetables income of the household compare to past increased by 7-8 times. 10,000 locals were involved in this training.

The outcome of Knowledge based natural resource use planning for improving sustainable economic development is achieved to some extent and the outcome is rated as **Highly Satisfactory**. Similarly, outputs under this outcome have achieved all of its targets, and yielded substantial environmental benefits of local and global value through capacity enhancement and knowledge based planning, without shortcomings. The outputs can be presented as “best practice”, hence is evaluated as **Highly Satisfactory**.

Component 3: Strengthening capacities/Institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies.

To achieve component 3, the project had identified 3 main outputs that need to be achieved. Activities and achievements of outputs are listed below.

Output 3.1: Ecosystem-based adaptation approaches/integrated river basin management mainstreamed in national resource use planning and implementation mechanisms in sector policies

Recommendation from EbA strategic priorities were reflected in the draft National Climate Change Adaptation programs for Agriculture, Water resource & Forest sectors. Mainly strategy of supporting socio-economic activities and ecological goods and services from rivers and wetlands, forest and rangeland ecosystems are reflected in these policies. Riverbed reforestation is highlighted as one of the emerging issues in Forest national program in relation to maintaining water services. In addition, data and information of the Risk and Vulnerability assessments reports of 2 ecoregions and Economic valuation of natural resource in context of climate change were used in the Mongolia’s second assessment report on climate change-2014 (Chapter II&III of MARCC-2014).

EbA principles & concepts were disseminated to Soum Governors through the EbA policy document distributed during National workshop of Soum Governors held in 30 October, 2014 in the Parliament House of Mongolia. Similarly, strategic priorities of EbA measures were disseminated through guidelines and advocacy materials during the national discussions of Governor’s administration offices of target Soums and Aimags and capacity building trainings organized for local stakeholders between 2014-2017.

Project organized several training, meetings/discussions to strengthen the capacity building of different stakeholders and also support EBA strategies and integrated river basin management, future replication and mainstreaming. All together more than 500 individuals were participated in these trainings. The types of training and number of participants were as follows:

- Regional trainings on “Adaptation to Climate Change” with involvement of secondary school teachers (84 participants of which 90% female).
- Training on introduction and, guidance to map natural borderlines wetlands around lakes (30 participants).
- 1st level national training for experience sharing of wetland coordinators (52 participants).
- Regional trainings for officers of the Eastern River basin administrations (68 participants).
- Capacity building training for River basin councils and River basin administrations (182, 125male/57female).

- Trainings on building and strengthening the capacity of Water Users Association members (110, male-88, female-22)

Output 3.2.: Institutional structure for river basin management integrating climate change risks (Administration and Council) established and operation in the target areas as model for replication

In 2014 a set of environmental laws were amended which also included establishment of River Basin Administration (RBA). RBA management plans introduced in the Law on Water and Law on Water Pollution.

Capacities of the RBAs have been improved through the development of Integrated Water Resource Management (IWRM) plan, trainings on water harvesting, water use efficiency and software skills and equipment support. Integration of IWRM plan development and the formation of water user associations RBAs has been effective in the western areas to resolve the serious conflict (violent) among vegetables growers regarding use of water resources. Since IWRM has been successfully integrated as a planning method at governmental levels, institutions are also now capacitated to handle upcoming water conflicts in future.

IWRM itself promoted inter-sectoral collaboration, which hardly existed on Aimag levels before. Since inter-sectoral collaboration is also essential for the implementation of climate policies and other projects will also benefit from the structures established by this project.

The project strengthened River Basin Councils (RBC) to ensure civil society participation in water management monitoring.

Output 3.3.: Best practices are identified and program for up-scaling best practices developed and implemented

The best practices are identified by the project and the dissemination of it is under process as some of the printed materials are still under editing process. Some of the best practices are as follows:

- A. A total of 13 springs were rehabilitated applying an innovative so called “double protection” techniques for recovery of overgrazed and degraded areas near springs. For the double protection, portable fences with wooden poles were constructed around the springs surrounding all degraded water catchment zone, in order to ensure natural regeneration of soil and vegetation. Within the fences, bushes and trees including Caragana (Caragana sp.) and willow (Salix sp) are planted to serve as a biological fences. Once the bushes and trees grow and reach certain height, the portable fences and wooden poles will be removed and used for other area. In addition, the construction techniques of established fences are considered as environmentally safe and sound. Three legged poles are placed on the subsoil without digging or making any damages to the earth. On the other hand, established legs are very tolerant to freezing and melting of snow and spring water.

As a result of spring protection, water flow improved making water available for local community and their livestock. This enabled herders to move back to their previous locations. Through this activity, almost 40,000 ha of abandoned pasture land is being utilized through improved water flow. Approximately 6600 rural populations with 184,000 livestock benefitted. Most importantly, a total of 80,000 ha of essential riparian zones became free of excessive grazing impact. Rehabilitated natural springs and creeks are starting to flow and feed Ulz River water discharge, which is essential for the eastern steppe. Volume of four lakes has increased as well. The activity encouraged local people to learn the rehabilitation method and protect other springs. In addition, it triggered behavior change towards pasture use, including rotational use of pasture and promoting investment in implementing similar measures to improve their resilience.

- B. Technology transfer site on ecological oriented agriculture/small scale tree nurseries with water saving and soil conservation techniques. With support of the project, local adaptation groups established 10 small scale tree nurseries covering 28.5 ha areas. The community members were involved in series of on-site trainings including tree and strawberry planting, greenhouse farming, irrigation technologies etc. In addition, several reforestation and forest management activities were conducted in target areas with the government funding covering 811.4 ha in Kharkhiraa, Turgen river basin and 1359 ha in Ulz river basin.
- C. *Rehabilitation of Engineered wells*: 20 wells were repaired since 2013. Wells for repairing were selected based on their location and importance for endangered species such as White-necked Crane and Mongolian Gazelle in eastern region. Through repaired wells, a total of 147.000 ha of abandoned and remote pasture land improved to use for livestock husbandry and a total of 138.800 ha were freed for grazing of wild animals. 103 herders benefited from this activities.
- D. Within the scope of piloting water saving techniques, an innovative water reservoir called “dry well” to potentially collect snowmelts and rain water of about a volume of 55 tons was established in Naranbulag soum of Uvs aimag. The dry well will be used to overcome water shortage during extended drought period for at least 3 households’ lands (~3 ha).
Based on the assessment on usefulness of the facility, this simple “dry well” is identified as good practice to replicate in other areas. All these practical approaches show benefits of overcoming water shortage, collecting water, increase of water efficiency following watering norms on types of plants and in return get economic gain on harvest and yields from animals. This also provided opportunity for locals to learn from each other, who obtained knowledge and skills and local governments to support replication of best practices within its Soums or beyond. Total area of irrigated is 3-4 ha.
- E. Two traditional rain and snow melts catchments were constructed in Turgun soum according to the pilot design and drawings developed in 2014 which is not required to be approved by the Technical Committee of Ministry of Construction and Urban Development (MCUD).
The established catchments with the total volume of 3000m³ is estimated to provide 10 thousand heads of livestock with drinking water for 2 months during the extended dry season.

The project was able to achieve the outcome of Local economic development strengthened through diversification, hence outcome is rated as **Highly Satisfactory**. Similarly, the outputs under this outcome have achieved all of the targets, and yielded substantial environmental benefits by establishing community enterprises, establishing water reservoirs, supporting sustainable bio-briquette production and sustainable Agriculture. The outputs can be presented as “best practice”, hence it is evaluated as **Highly Satisfactory**.

3.3.6 Country Ownership

This project was developed with the lessons from several projects related to Climate Change and water managements. The project was implemented by the Ministry of Environment and Tourism (MET). Besides, other ministries like Ministry of Mineral Resources and Energy, Local Government, Administration for Land Affairs, construction, Specialized Inspection Agency and River Basin Councils. These government agencies were not only executing and implementing project activities but also involved from the project development stage. Moreover, the project outcomes and outputs identification was also carried out involving relevant government agencies. The result of the project complemented Government of Mongolia’s priorities and development strategy. Therefore Government of Mongolia has ownership in this project. Local Governments and national government have expressed their commitments to support continuation of the outcomes of this project.

Finally, the project will contribute to safeguarding the ecosystem and environment by enforcing Ecosystem Based Adaptation and addressing risks related climate change by creating an environment for economic development in the area. The project outcomes will bring Mongolia a step closer to achieving MDG Goal 7: Ensure environmental sustainability.

3.3.7 Mainstreaming

The mainstreaming of River basin Management in natural resource use planning and implementation mechanism in sector policies is one of the main output of the project. Enhancing knowledge and involving local government and community based institutions in project implementation has helped to mainstream climate change and river basin management. Development of a knowledge base and information supports evidence based planning. Enhancing knowledge and making communities aware of climate change impacts help in decrease risks and safeguard livelihoods and is in line with the UNDP Country Program Action Plan (CPAP).

As per project document, the project development process involved analysis of various options of management by utilising scientific knowledge, indigenous knowledge and lessons learned from past projects. The project's efforts were focused on identifying policy gaps and recommending policy needs, enhancing capacity of local's to monitor natural resources and climate change impacts and management of river basins, establish institution for river basin management, networking with like-minded national, regional and international institutions for fostering EBA mainstreaming in resource planning and sector policies. The EbA approach to address land and water management was relevant as people had a clear vested interest due to the direct contribution to their livelihoods.

The fundamental principle of the project was to address policy gaps, knowledge management, economic development of local communities and mainstreaming river basin management into development planning.

3.3.8 Sustainability

The project results are likely to be sustainable beyond the project life. As will be seen below, the sustainability at the project level is actually very strong and it is difficult to see what more those involved could have done.

Financial: The outlook for the long-term financial sustainability of the project appears unusually good but it is connected to the interest of the local government and the national government. MNET mentioned that they are committed to continue their support to these project activities. Similarly, the local government mentioned that they will continue their support and will utilise information in planning exercises help to mitigate risks from climate change and River basin management. There are several other projects being implemented in these areas which will be utilising the community groups formed by this project to implement their activities so this will directly or indirectly support the continuation of some of the project activities. Similarly, some projects are in the pipeline or being developed. These also assure financial sustainability at project site level. Financial sustainability is therefore **Likely**.

Socio-economic: The social sustainability of the project appears very promising. The awareness-raising activities have certainly been beneficial and undoubtedly changed people's minds at the community level and at local and national government levels as regards river basin management and climate change impacts. The empowerment of local communities through awareness raising and involvement in river basin management and monitoring of natural resources and climate change impacts has been one of the lynchpins upon which all behavioural change has occurred. For many others, this has been matched by provision of safety measures and knowledge base establishment directly linked to land and water degradation risk management and these arrangements are particularly strong. This has created a supportive environment and as a result enjoys a very wide support base which is being used to help in replicating the approach in other vulnerable areas. As a result, the socio-economic sustainability is adjudged to be **Likely**.

Institutional and Governance: The institutional sustainability of the project is good. Those agencies directly involved appear strongly committed towards its aims and the impacts that it has had. Clearly, the decision to route all activities directly through local government institutions and local communities has paid dividends in this respect, and the local government officials at the pilot sites are not only extremely supportive of what has been accomplished but are also strong advocates of its achievements. Project also contributed to establish institution and enhanced their capacity and activities was to support legal provision made in the new laws of the government of Mongolia. Moreover, government authorities are sensitised on land and water degradation issues and also river basin management is mainstreamed in natural resource use planning in sector policies so they may prioritise future outputs of this project. Therefore, the institutional sustainability is ranked as **Likely**.

Environmental: Environment sustainability is one of the important elements of the project strategy. The project achievements will directly reduce vulnerability of life and property and also ecological resources of Mongolia. The capacity development, policy formulation and evidence based planning to mainstream river basin management and climate change will make project outcomes sustainable. Moreover, involvement of local communities and community based organisations assures adaptation to river and land degradation and makes the project achievements sustainable. Possible precautions are taken to safeguard water harvesting and manage catchments. The activities of this project address potential environmental risks so there is less possibility of environmental risks associated with the sustainability of this project, hence the environmental sustainability is deemed to be **Likely**.

The overall sustainability of the regional component is ranked as **Likely**.

3.3.9 Catalytic Role and Replication

Discussion of replication in relation to the EbA Project has to be undertaken at two levels – the macro-level of replicating it as a national-scale project to cover a wide area, and the micro-level with regard to replication at site-based interventions. Success of EbA in addressing environmental and water related issues in the project sites has indicated that the approach can work in Mongolia and could be replicated in broad area including all other vulnerable parts of the country. The integrated nature of the policy-level mainstreaming, awareness generation on EbA, climate change and river basin management and generation of knowledge among local communities and development planners, promotion of increased enforcement, research and monitoring provide a solid model of success and that it may influence future project design in the country.

At the micro-level, the project's performance was good. Most outputs of the project fall under the middle two levels of catalytic role, i.e. demonstration and replication. It also creates environment for economic development in these areas. Creation of environment for economic development will also provide incentives for mainstreaming EbA into National Development Plans.

Lessons learned with up-scaling needs to be replicated in other vulnerable areas of Mongolia. The project contributed to development of legislation and trained local government staffs and community members. These will help to strengthen EbA efforts and also make replication easier.

Government agencies, local government institutions and community based organisations and local communities expressed interest to replicate lessons from this project in wide areas.

Besides Mongolia, the learning from this project could be useful for other countries with similar land degradation problems. Hence for the benefit of projects and for replication in other areas, the project disseminated lessons learned to a wide audience through various means like report distribution, information sharing through different networks, shared with other AF and UNDP projects, international networks and other institutions.

The project conducted meetings and workshops with government officials and other stakeholders. Similarly, exposure visits were conducted for line departments and stakeholder representatives. The awareness generation among line department, government agencies and other stakeholders will play a catalytic role to replicate lessons in other vulnerable areas. In addition, three projects are being developed to submit to GEF, AF and GCF and expected to build on the outcomes of this project, especially to support issues around River basin management. The project also developed an exit strategy.

3.3.10 Ratings

104. As per UNDP guidelines, the TE ratings are consolidated in Table 9 below.

Table 9: Terminal Evaluation's Rating Project Performance

Criterion	Comments	Rating
Monitoring and Evaluation		
Overall quality of M&E	The design of M&E was up to standard with a fully itemised and cost plan included in the Project Document covering all the various M&E steps including the allocation of responsibilities.	Highly Satisfactory
M&E design at project start up	As above.	Highly Satisfactory
M&E Plan Implementation	M&E implementation was satisfactory in case of internal monitoring and progress and impact monitoring except few cases.	Satisfactory
IA & EA Execution:		
Overall Quality of Project Implementation/Execution	The Project implementation was slow at the first year as it has to make arrangements and also field sites selections has to be done. But it went smoothly in the following years. Technical feedback was overall satisfactory.	Satisfactory
Implementing Agency Execution	MET integrated team exhibited drive to meet the targets and able to do so. They showed their desire to communicate their knowledge to others. Still room for scaling up activities and technical upgrading.	Satisfactory
Executing Agency Execution	The Ministry of Environment, the implementing agency linked very well with UNDP; and was very actively involved in project guidance especially at the project board level and project implementation and provided supervision and backstopping to the Project.	Satisfactory
Outcomes		
Overall Quality of Project Outcomes	Overall quality is of the high order.	Highly Satisfactory
Relevance	The project intervenes to conserve globally important biodiversity rich area, critical watershed area and livelihood of the communities affected by climate change impacts is congruent with GEF and national priorities, and remains pertinent in light of the current levels of threats.	Relevant
Effectiveness	A review of outcomes to impacts (ROtI) shows the overall likelihood of impacts being achieved is Likely.	Highly Satisfactory
Cost-effectiveness (Efficiency)	Project management costs were higher than the allocated budget and expected outcomes were achieved by the time of terminal evaluation. so efficiency was strong.	Highly Satisfactory
Sustainability:		
Overall likelihood of risks to Sustainability	There are some minor risks but since stakeholders are aware, strengthened and committed it is assumed that these risks will not take place or could be handled.	Likely

Financial resources	Good – Central government, local government and community based groups showed long-term commitment to the area and there is evidence of considerable technical, policy and some financial commitments from the government.	Likely
Socio-economic	Solid – beneficiaries showed increased awareness and changed behaviours linked to climate change risk management.	Likely
Institutional framework and governance	Institutionally good through strengthened capacity and support from senior staff in the government both at local and central levels. Community institution and local government strengthened.	Likely
Environmental	The project itself is designed to address environmental risks and other than unpredictable ones there are no evident risks. Some risks related to climate change exist but that is beyond control of project. The project had activities to address water related issues and maintaining water basin.	Likely
Impact:		
Environmental Status Improvement	Improved was management; generation of information on soil, weather, water and other natural resources and practicing of sustainable agricultural practices and development of knowledge base and enhancing of capacity of government and other agencies for evidence based planning was satisfactory. Similarly, policy recommendation on river basin management and development of Integrated River Basin Management Guidelines, bringing critical water basin under protected area management and development of green development plans by local governments will support long term management of water and other natural resources.	High
Environmental Stress Reduction	Construction of physical structures like water reservoir and well for water supply to livestock, human consumption and agriculture practices and capacity enhancement of local government and community based organisations reduces environmental stress. Similarly, energy efficient technology like solar, bio-briquette will decrease pressure on forests and also reduce use of coal. Moreover, awareness generation on local communities and at government level also creates an environment for proper management of water basin.	High
Progress towards stress/status change	Generally good – construction of water reservoir and well helped to address water scarcity which was affecting livestock which is main economy of the locals and also affecting agriculture practices, enhancing knowledge on water management and efficient use helps to decrease pressure on water resources and also on pasture land. Establishment of weather stations helps to address damage to livelihood and property of local community and also help to adopt proper measure to bear the situation. Community management arrangements, increased interest of the government bodies, local political bodies and NGOs, increased awareness of planners progressed and expected level of stress and status change was made.	High
Overall Project Results		Highly Satisfactory

4. Conclusion, Recommendation & Lessons Learned

4.1 Conclusion

The project was able to accomplish all targeted activities and only approval of Integrated Basin Management Guidelines and proposal of the two protected areas remained to be approved by the cabinet. But as these are very critical issues and are already approved by the local government Ministry has prepared to propose in the coming Cabinet meeting with priority. To address the water related problems, the project intervened in four main areas: review and improvement of policies, awareness generation, infrastructure development with capacity enhancement and improvement of rural household economy. The policy development approaches included revision of policies and plans to incorporate climate change issues and water basin management issues. Similarly, River basin management guidelines were developed to address climate change issues and also development and green development plans and arrangement in policies water and climate change issues mainstream these in development activities. Likewise, policy development and amendments were made for addressing climate change issues. To encourage evidence based planning, the project conducted studies on various subject including baseline information generation, economic studies of climate change and adaptation interventions, sustainable water harvest, mapping of glaciers and also strengthened meteorology stations in the field to have regular updates on weather, ground water level and river status and made these available to the local and national government officials. Infrastructures facilities like water reservoirs and weather stations for regular weather information transmission and canal construction/repairing and green houses and well construction for irrigation in extended dry season were completed. Without addressing livelihoods of the people it is not possible to address natural resources management issues it is related to each other. Hence, the project trained farmers in advance irrigation and farming techniques, created reservoir, rain and snow water harvest facilities, protected springs and also provided training on various enterprises together with small grants to initiated income generation activities. Similarly, promotion of bio-briquettes, solar energy, and water facilities also improved helped to decrease drudgery of women, decrease pressure on the forests and also supported the local economy. Translocation of Marmot, creation of water bodies for endangered birds and designation of protected areas and arrangement of community protection contributed in biodiversity conservation. To reach a large audience, the information generated by the project was uploaded in websites of the implementing Ministry and UNDP and also networking with like-minded institutions within the country was facilitated by the project.

The EbA Project was designed with provision for appropriate management arrangements. The project team has managed to deliver a series of interventions that have reduced the threats of desertification. This has been achieved through generation of awareness from local to the national level, mainstreaming EbA in development planning through developing provincial level Green Development plans, creating a knowledge base and facilitating access to it, as well as construction of physical structures to combat drought. Due to political transition, approval of Integrated River basin Management Guidelines and proposals to create two protected areas by the cabinet were delayed but has been approved by local government and Ministry already placed them on high priority. Indicators of most of the activities were seen by the evaluation team. Project practiced adoptive management and lessons and recommendations were addressed on time to strengthen the implementation process. Though the project has been underpinned by good science and a technical approach of good calibre, there is still room for further technical improvement. It has enhanced capacity to incorporate ground information related to ground water, river water status, glacier situation, weather, local practices and climate change issues into the development planning process of the local government in the pilot areas; and improved environmental awareness and raised concerns about desertification risk at the local communities and government.

To make the outcomes and interventions sustainable, the project formed community groups, trained them in various technologies and on financial management, enhanced knowledge and capacity of local government. The community members and local government were made aware of the benefits of using weather information for

farmers and pastoralists' decision making. The project tested participatory planning and implementation approaches. Since these approaches showed very positive impact, the lessons learned from this should be replicated in other catchment areas and pasturelands.

4.2 Recommendations

Corrective actions for the design, implementation, monitoring and evaluation of the project

- I. The project provided support to rural schools to establish rain water harvest. But most of the water running from the roof was dropping down due to low height of the collecting canal. Similarly, to store collected water only one drum was available. School had big roof and that could help to collect large quantity of water and for that they need bigger reservoir. Also the height of the canal on which water from the roof drop need to be height then the edge of the roof.
- II. The project target areas have a large numbers of livestock which supply large amounts of dung. The dung could be used for bio-briquette production. Project supported only one bio-briquette. Briquette production program could be supported in all areas of these soum to decrease pressure on wood for energy.
- III. Solar technology was used for meteorology activities, food drying, water pumping and heating. Out of 23 well only 5 were equipped with solar pump and few household heating piloted using solar technology so using these experience future replication should give more priority to solar technology. Use of solar generator reduce cost of fossil fuel. Introducing solar generator and training locals on maintenance of them will reduce cost for irrigation and also provide income generation opportunity by repairing generators.
- IV. Snow water collection and rain water collection canals are not cemented so water loss from seepage is high. Such canals should be made concrete using locally available stones and pebble.
- V. In some areas, within 100m distance from the irrigation canal, farmers were irrigating agriculture field by pumping water using fossil fuel. Extension of irrigation canal in such areas could help to improve agriculture and also reduce farmers farming cost by reducing cost of fossil fuel.

Actions to follow up or reinforce initial benefits from the project

- V. The project developed integrated river basin management guidelines and also proposed two protected areas. These are approved by the local government and also approved by ministry. Follow up should be made to approve it from cabinet and thereafter by parliament.

Proposals for future directions underlying main objectives

- V. It is recommended to upscale and replicate lessons learned from this project by UNDP, Government of Mongolia and other agencies working in similar issues. There could be many potential donors willing to invest in such activities so it is also recommended that lessons learned should be disseminated to a large audience including other areas of the water basin and beyond. UNDP and AF could use its network for dissemination.
- XI. It is recommended to promote insurance mechanism in pastoralism and agriculture to safeguard farmers. Due to climate change weather became very unpredictable. If farmers whose economy is not so strong have to take risk of climate change then their situation will further worsened. Hence to encourage farming and pastoralism, insurance mechanisms should be promoted. Considering the economic situation of the farmers, premium of such insurance should not be high or be subsidised.

4.3 Lessons Learned

Best and worst practices in addressing issues relating to Relevance, Performance and Success

Lessons learned are arranged under project-related headings. Further discussions and key points for future projects have been added in this section. Some of the lessons learned listed below have arisen from discussions with persons interviewed during the evaluation and the team thank them for their insights.

Strategic

- *Community organisations lack scientific knowledge and are ill-equipped for handling such projects so support to enhance their knowledge and strengthen their capacity will help to encourage them to continue in adapting risk of climate change or desertification and there by facilitate a cooperative approach for reducing damage from land degradation.*

Lack of knowledge has been seen as a drawback in many projects limiting communities from taking precaution. Similarly, lack of knowledge, literacy and lack of capacity affect their ability to manage risk. Awareness generation on risk of climate change and its potential impacts, available adaptation measures and availability of appropriate technology helps to reduce damage. Moreover, linking them with weather monitoring to minimise risk related to weather. Increased economic benefits from sustainable agriculture practices and other income generation activities encourage communities to conserve their resources.

- *Local adaptation knowledge is easily adapted by the rural communities.* Local knowledge should be promoted together with scientific knowledge to respond to local situation as they are more easily adapted by the rural communities. Local communities were good in identifying signs of land degradation, climate change impact and proposing suitable and feasible mitigation measures. One example observed in project areas was that local community's knowledge regarding constructing dry well and snow water harvest to address prolonged dry season and linking this with resolving pasture and agriculture land issues.
- The farmer exchange visits promoted farmer to farmer learning and technology transfer from one community to another. This is the best way for transferring technology to farmers as farmers could explain by simplifying the technical terms more appropriately to another farmer making learning more effective.

Design

- *Working directly through existing government structures brings dividends*
The project chose to work directly with the Ministry of Environment and Tourism and local governments, rather than setting up parallel implementation structures. This decision has proved very successful not only in empowering government by providing experience and training, but also in developing effective government "ownership", engagement, participation and motivation, thereby promoting long-term sustainability of the project's achievements.

- *Designing a project linking various institutions from grassroots level institutions, government agencies, local authorities and communities generates huge benefits for sustainability, and through the synergies developed provides the intervention with much greater effectiveness than that which can be achieved by stand-alone projects.*

The project chose to work with various institutions at different levels and local communities. This helped in empowering these institutions by providing experience, training and equipping in a well-funded and well-equipped environment and also in developing effective "ownership", engagement, participation and motivation, thereby promoting long-term sustainability of the project's achievements at community levels. It also helped to generate local guardianship (from community organisations or groups, local authorities and National Government's relevant sectors) that made project implementation efficient and effective.

- *Community participation in the project design, formulation of implementation modality, implementation and monitoring is very important.* This will help to implement projects effectively and also make activities sustainable. In this project, the inclusion of local communities, through the small grants approach helped local communities to

identify environmental issues that need to be addressed and enabled them to innovate a wide range of adaptation measures and livelihood improvement strategies.

- *Local communities understand causes of pastureland degradation and environmental problems but due to lack of livelihood alternatives they are forced to continue unsustainable practices so if project designs consider alternatives for betterment of livelihood by improving their practices then locals will cooperate.* The local communities understand and appreciate that the livelihood activities like coal and wood burning, overgrazing and poor water and soil management accelerate environmental degradation. They also showed willingness to change their practices if they are provided with alternative environmentally sound practices like water efficient agriculture and bio-briquette which support their livelihoods.

Project Management

- *Constant contacts with communities are vital to community-based water and land degradation risk management projects.* Good communication and regular communication in relation to project activities with the communities helps to promote successful, community-based projects as they built trust and motivation of the targeted local communities. To achieve this, the quality and commitment of those employed at the sites are key attributes of a project. This project has been benefited from efficient site coordinators and technical staff. But what the evaluation team believes to be the most important factor is the almost constant contact that they have had with the communities throughout the project's lifetime. This frequency of contact has undoubtedly enabled the project to build high levels of trust, capacity, and motivation which in turn has facilitated the change in people's mind-sets and behaviours and brought about the success of the EbA schemes. The role of the National Project coordinator is very vital in motivating field staffs.
- *High participation of women in groups and forming women's groups will assure more success.* Women were found more serious in EbA activities. It was observed that the groups with more women and women groups were more efficient in implementation and functioning and able to generate expected results. This also helped to generate leadership and develop decision making authority among them and also increased income through income generating activities (handicrafts making, sustainable and water efficient agriculture, livestock, cottage industry etc., also see outputs) improving their livelihoods. Women were found to be more engaged in EbA activities. This could be because they are the one who most interact with natural resources through activities like water collection, livestock grazing, cooking and working in agriculture field. The community groups with domination of women and women's group were most successfully implementing project activities and able to achieve desired results.

Annex I: Terms of Reference for Terminal Evaluation

TERMINAL EVALUATION TERMS OF REFERENCE

INTRODUCTION

In accordance with UNDP and AF M&E policies and procedures, all regular sized UNDP supported AF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for a Terminal Evaluation (TE) of the “Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia” (MON/12/301) project (PIMS #4505).

The essentials of the project to be evaluated are as follows:

PROJECT SUMMARY TABLE

Project Title:	“Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia” (MON/12/301) project			
AF Project ID:	MNG/MIE/EBA/2011/1		<u>at endorsement</u> <u>(Million US\$)</u>	<u>at completion</u> <u>(Million US\$)</u>
UNDP Project ID:	00079875	AF financing:	5,069,124	4,440778.07
Country:	Mongolia	IA/EA own:		
Region:	Asia-Pacific	Government: In kind contributions	5,000,000	
Executing Agency:	Ministry of Environment and Tourism (MET)	Other: UNDP	500,000	492,062.66
Other Partners involved:	UNDP	Total co-financing:		
		Total Project Cost:	10,569,124	4,932,840.73
		ProDoc Signature (date project began):		18 Nov 2011
		(Operational) Closing Date:	Proposed: 31 Dec 2017	Actual: 31 Dec 2017

PROJECT BACKGROUND INFORMATION

Mongolia is witnessing significant alterations to water and ambient air temperatures and precipitation patterns. Both the frequency and severity of extreme weather events are increasing. From 1940 to 2007, the annual mean air temperature in Mongolia increased by approximately 2.14°C. This is three times higher than the global average. Warming is projected to further increase up to 5°C by the end of the 21st century.

To address the additional ecological challenges presented by climate change, there is still an urgent need to conserve and rehabilitate the ecosystem services upon which Mongolia’s rural economy, traditional culture, and rich biodiversity depend. This required a paradigm shift to ensure that the very foundation of human livelihood - ecosystems and their services - is sufficiently resilient to climate change pressure, and to enable communities to adapt to climate change.

The project was designed to maintain ecosystem functions and water provisioning services addressing the needs of critical for survival of rural communities and national economy. The project is implemented at two large landscapes: **the Turgen/Kharkhiraa sub-river basin** in Altai Mountains and Great Lakes Depression (Altai/GLD) eco-region and **the Ulz river basin** in the Dornod steppe and Mongol Daurian eco-region.

The target landscapes represent a significant portion of Mongolia's water resources and encompass an array of representative ecological, social and economic samples in the country, with potential for generating a variety of experiences and lessons. Both eco-regions and watersheds are emblematic of Mongolia's resilience barriers and concrete adaptation challenges, e.g., over-grazing, riparian disturbance, and over-appropriation. The specific locations were selected because they are: (1) "distinct", offering two very different ecological zones for establishing EBA practices; (2) "representative" of key climate change challenges; (3) appropriately scaled both in terms geographic size and population to allow for substantial, landscape level improvements within budget constraints; and, (4) strategic in that the locations are priorities for government action and allow for building upon and/or coordinating with on-going programming.

Based on these studies Ecosystem based adaptation (EbA) guidance was prepared on adaptation measures for current and future climate change and variability and associated disaster risks. Adaptation practices and technologies for sustaining social, economic, cultural services provided by ecosystem are introduced in accordance with these recommendations aimed to maintain regional ecosystem resilience at present and in the future.

The main objective of the project is to maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. The project is implemented between 2012 and 2017. Geographically, the project covers i) the Altai Mountains and Great Lakes Basin Eco-region; ii) the Eastern Steppe Eco-region; focusing on the Turgen/Kharkhiraa sub-river basin – (Turgen, Ulaangom, Sagil, Bukhmurun, Khovd, Tarialan, Naranbulag soums of Uvs Aimag); and the Ulz River Basin – (Chuluunkhoroot, Dashbalbar, Bayandun, Bayan-Uul, Gruvanzagal, Choibalsan, Sergelen soums of Dornod aimag; Bayan-Adarga, Batnorov, Norovlin soums of Khentii aimag).

The project has three interconnected components:

- (i) Landscape Level integrated land use and water resources monitoring and planning system focused upon reduction of ecosystem vulnerability to climate change developed and under implementation;
- (ii) Implementing landscape level adaptation techniques to maintain ecosystem integrity and water security under conditions of climate change;
- (iii) Strengthening institutional capacities to support integrated river basin management, its replication and mainstreaming in sector policies;

Upon the request of the Government of Mongolia, UNDP is the Multilateral Implementing Agency (MIE) for this project. The Project is implemented following UNDP's National Implementation Modality (NIM). The designated Implementing Partner of the project is the Ministry of Environment and Tourism (MET). MET is responsible for implementing UNFCCC and water resource management and holds the responsibility of the senior supplier. MET is ultimately responsible for the timely delivery of inputs and outputs and for coordination of all other Responsible parties including other line ministries, relevant agencies, and local government Authorities. The MET appointed the National Project Director, the chair and members of the Project Board (PB), responsible for making management decisions for the project and plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning.

OBJECTIVE AND SCOPE

The project was designed to maintain ecosystem functions and water provisioning services addressing the needs of critical for survival of rural communities and national economy. The project is implemented at two large landscapes: the Turgen/Kharkhiraa sub-river basin in Altai Mountains and Great Lakes Depression (Altai/GLD) eco-region and the Ulz river basin in the Dornod steppe and Mongol Daurian eco-region.

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects¹.

The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

EVALUATION APPROACH AND METHOD

An overall approach and method² for conducting project terminal evaluations of UNDP supported AF financed projects has developed over time. The evaluation should include a mixed methodology of document review, interviews, and observations from project site visits, at minimum, and the evaluators should make an effort to triangulate information. The evaluator is expected to frame the evaluation effort using the criteria of **relevance, effectiveness, efficiency, sustainability, and impact**, as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included with this TOR (*fill in [Annex C](#)*) The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the AF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission to Mongolia, including the following project sites: **the Turgen/Kharkhiraa sub-river basin** and **Ulz river basin**. Interviews will be held with the following organizations and individuals at a minimum:

1. Ministry of Environment and Tourism
2. Ministry of Food, Agriculture, Light Industry
3. Ministry of Finance
4. Local Government (aimags and soums in the 2 target eco-regional landscapes)
5. Administration of Land Affairs, Geodesy and Cartography
6. National Agency for Meteorology and Environment Monitoring
7. The Nature Conservancy
8. World Wildlife Fund
9. Mongolian Academy of Science and research institutes
10. River basin administrations
11. River basin councils/ Water user groups
12. Communities
13. National media etc.

¹ The guidance document for UNDP-supported GEF financed projects can be used for AF financed projects as well. The document is available via this [link](#).

² For additional information on methods, see the [Handbook on Planning, Monitoring and Evaluating for Development Results](#), Chapter 7, pg. 163

The evaluator will review all relevant sources of information, such as the project document, project reports – including Annual PPR, project budget revisions, midterm review, progress reports, AF tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in [Annex B](#) of this Terms of Reference.

EVALUATION CRITERIA & RATINGS

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework (see [Annex A](#)), which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: **relevance, effectiveness, efficiency, sustainability and impact**. Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in [Annex D](#).

Evaluation Ratings:			
1. Monitoring and Evaluation	rating	2. IA & EA Execution	rating
M&E design at entry		Quality of UNDP Implementation – Implementing Agency (IA)	
M&E Plan Implementation		Quality of Execution - Executing Agency (EA)	
Overall quality of M&E		Overall quality of Implementation / Execution	
3. Assessment of Outcomes	rating	4. Sustainability	rating
Relevance		Sustainability of Financial resources	
Effectiveness		Sustainability of Local initiatives/cooperation	
Efficiency		Socio-political Sustainability	
Overall Project Outcome Rating		Institutional framework and governance	
		Environmental	
		Overall likelihood of sustainability	

PROJECT FINANCE / COFINANCE

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized with consideration of the parallel complementary measures within the similar contexts taken by the Government. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill. US\$)		Government (mill. US\$)		Partner Agency (mill. US\$)		Total (mill. US\$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants	500,000				5,069,124		5,569,124	
Loans/Concessions								

• In-kind support			5,000,000				5,000,000	
• Other								
Totals							10,569,124	

MAINSTREAMING

UNDP supported AF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender were successfully mainstreamed into the project. The evaluation will examine this project's contribution to the UNDP's Country Programme Document.

IMPACT

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: a) verifiable improvements in ecological status, b) verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements.³

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report must include a chapter providing a set of **conclusions, recommendations** and **lessons**. Conclusions should build on findings and be based in evidence. Recommendations should be prioritized, specific, relevant, and targeted, with suggested implementers of the recommendations. Lessons should have wider applicability to other initiatives across the region, the area of intervention, and for the future.

IMPLEMENTATION ARRANGEMENTS

The principal responsibility for managing this evaluation resides with the UNDP CO in Mongolia, in terms of per diem, it goes as a part of the financial offer and the payment is proposed as lump sum payable in installments. With regard to travel arrangements within the country, it falls under the responsibility of the Project team to arrange transportation in UB and field visits by covering travel costs. For more information on duration of staying in UB and countryside please refer to Draft mission agenda. The Project Team will be responsible for liaising with the Evaluators team to set up stakeholder interviews, arrange field visits, coordinate with the Government etc.

TENTATIVE MISSION AGENDA FOR INTERNATIONAL CONSULTANT ON TERMINAL REVIEW

This schedule shall be undertaken from July 30 to August 10, 2017.

No	Activity	Date	Responsible parties/persons
1.	Arrival in UB	30 July 2017	IC
2.	Briefing at UNDP CO, Mongolia (also security briefing)	31 July 2017	IC/NC, PO UNDP CO
3.	Meet at PIU	31 July 2017	IC/NC, PIU

³ A useful tool for gauging progress to impact is the Review of Outcomes to Impacts (ROtI) method developed by the GEF Evaluation Office: [ROtI Handbook 2009](#)

4.	Interview with relevant parties in Ulaanbaatar city	31 July -1 August 2017	PIU/IC/NC
5.	Field trip to eastern target area, Ulz river basin.	2-6 August 2017	PIU will be responsible for trip and meeting arrangements to and at target sites
6.	Field trip to eastern target area, Kharkhiraa/Turgen sub river basin	7-10 August 2017	PIU will be responsible for trip and meeting arrangements to and at the target sites
7.	Mission wrap up meeting	10 August 2017	IC/NC/PIU (All relevant parties)
8.	Debriefing UNDP CO, Mongolia	10 August 2017	IC/NC, PO UNDP CO
9.	Departure	11 August 2017	IC

EVALUATION TIMEFRAME

The total duration of the evaluation will be 27 working days over a time period of 10 weeks according to the following plan:

Activity	Timing/ Number of working days	Completion Date
Preparation	3 days:	3-5 July 2017
Evaluation Mission	12 days:	30 July -10 August 2017
Draft Evaluation Report	10 days:	22-31 August 2017
Final Report	3 days:	6-8 September 2017

EVALUATION DELIVERABLES

The evaluation team is expected to deliver the following:

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 2 weeks before the evaluation mission: <i>17 July 2017</i>	Evaluator submits to UNDP CO
Presentation	Initial Findings	End of evaluation mission: <i>10 August 2017</i>	To project management, UNDP CO
Draft Final Report	Full report, (per annexed template) with annexes	Within 3 weeks of the evaluation mission: <i>31 August 2017</i>	Sent to CO, reviewed by RTA, PCU, AF OFPs
Final Report*	Revised report	Within 1 week of receiving UNDP comments on draft: <i>8 September 2017</i>	Sent to CO for uploading to UNDP ERC.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report.

TEAM COMPOSITION

An evaluation team will be composed of one international and one national evaluator. The consultants shall have prior experience in evaluating similar projects. Experience with AF/GEF financed projects is an advantage. The evaluators selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

Terminal evaluation:

International Consultant/ Team Leader

The Team Leader will have overall responsibility for the work and operation of the evaluation team, including the coordination of inputs from national team member. The Team Leader is responsible and accountable for the production of the agreed deliverables.

The Team Leader is responsible for the following:

- Desk research of existing management plans, survey/research/reports and databases;
- Conduct fieldwork and interview stakeholders, and communities to generate authentic information and opinions;
- Write and compile the information and reports as needed;
- Make a presentation of key findings highlighting achievements, constraints, and make practical recommendations to decision makers and stakeholders;
- Draft and finalize the Evaluation Report.

National Consultant

The national consultant will assist and collaborate with the Team Leader in all the tasks mentioned above including fieldwork, logistic arrangement in cooperation with PIU. Specific tasks are as following:

- Desk review of project materials and databases;
- Fieldwork together with international consultant. Carry out stakeholders' interview as requested by the team leader and do interpretation work (if necessary);
- Write brief notes or certain parts of the evaluation report as agreed with the team leader;
- Provide inputs either by written or verbally to the presentation, highlighting key findings, achievements and constraints;
- Contribute to draft and final Evaluation Reports;
- Translate the draft and final reports into Mongolian.

International Consultant/ Team Leader Required Experience:

Education:

- A post-secondary/advanced degree (Masters level or higher) in nature & environment science, management and or other closely related field.

Experience:

- Minimum 10 years of relevant professional experience in climate change adaptation and EbA
- Minimum of 5 years experience evaluations (with UNDP and/or GEF-financed projects is an advantage)
- Experience with results-based monitoring and evaluation methodologies

- Technical knowledge in the targeted focal area(s): biodiversity, land use and water management in context of similar climate condition
- Excellent communication skills
- Demonstrable analytical skills

National Consultant/ Team Specialist Required Experience:

Education:

- A higher education degree (Masters level or higher) in in nature& environment science, management and or other closely related field.

Experience:

- Minimum 5 years of relevant professional experience in in climate change adaptation and EbA
- Experience with results-based monitoring and evaluation methodologies
- Technical knowledge in the targeted focal area(s): land use and water management in context of climate change
- Excellent communication skills
- Demonstrable analytical skills

EVALUATOR ETHICS

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the [UNEG 'Ethical Guidelines for Evaluations'](#).

PAYMENT MODALITIES AND SPECIFICATIONS

%	Milestone
10%	At submission and approval of inception report
50%	Following submission and approval of the 1ST draft terminal evaluation report
40%	Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report

APPLICATION PROCESS

Applicants are requested to apply online (<http://jobs.undp.org>) by 26th May 2017. Individual consultants are invited to submit applications together with their CV for these positions. The application should contain a current and complete C.V. in English with indication of the e-mail and phone contact. Shortlisted candidates will be requested to submit a price offer indicating the total cost of the assignment (including daily fee, daily allowance and international travel costs). Travel cost for the evaluation mission to target river basins shall be covered by the Project Implementing Unit.

UNDP applies a fair and transparent selection process that will take into account the competencies/skills of the applicants as well as their financial proposals. Qualified women and members of social minorities are encouraged to apply.

ANNEX A: PROJECT LOGICAL FRAMEWORK

Objective and Components	Indicator	Baseline				Midterm evaluation	Targets/End of Project	Source of verification	Risks and Assumptions
						% of Target Fulfilled			
Project objective: Maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. Main indicator is Mean annual in-stream flow.	Mean annual in-stream maintained or increased in two project sites ⁴ 1. 30 day average of minimum discharge in warm period 2. Long term mean discharge and annual average discharge in selected year.(m3/s)	Kharkhiraa River: 1.58 m³/sec Turgen River: 0.78 m³/sec Ulz River: 0.00 m³/sec (at Chuluunkhoroot) Kharkhiraa River: 5.15 m³/sec Turgen River: 2.55 m³/sec Ulz River: 5.88 m³/sec (at Chuluunkhoroot)				No, situation worse than baseline ⁵ Situation improved for Ulz	Kharkhiraa River: 1.58 m³/sec Turgen River: 0.78 m³/sec Ulz River: 0.01 m³/sec (at Chuluunkhoroot)	Hydrological data reported by existing and new monitoring station	Hydrological reporting stations remain operational (The project will provide support strengthening analysis and monitoring capacity)
	Ground and surface water quality is meeting Mongolian standards in two project sites ⁶		Turgen	Kharkhira	Ulz	In all cases overfulfilled	Meeting Mongolian standards	Surface water monitoring reports submitted by national and target site stakeholders Project reporting and evaluation	Impacts of climate change do not outpace project adaptation responses (this will be alleviated)
		Suspended solids MNS4586:1998/ 35mg/l	16.0	40.0	8.5	Not fulfilled for Turgen and Ulz, overfulfilled for Kharkhira			
		Permanganate COD MNS4586:1998/ 10 mg/l	1.4	7.0	5.28	Overfulfilled in Turgen and Kharkhira, not fulfilled in Ulz			
		NH+4 MNS4586:1998 0.5mg/l	0.42	0.54	0.083	Overfulfilled everywhere			
		Total mineral P MNS4586:1998/0.2 mg/l	0.34	0.45	0.79	Overfulfilled in Turgen and Kharkhira, not fulfilled in Ulz			
		Total Fe MNS4586:1998/ 0.1 mg/l	0.23	0.14	0.0	In all cases overfulfilled			
		Decreased soil compaction, g/cm³	TBD	TBD	TBD				
		Changes of aggregates, % (at the layer 0-10cm, 10-20cm)	TBD	TBD	TBD				
		Water temperature (Celsius)	7.4	5.8	14.4	14/ 12.5 / 19			

⁴ In-stream base flow is a portion of stream flow that comes from the deep subsurface flow and delayed shallow subsurface flow during the summer (un-frozen) period.

⁵ The indicators are not feasible, therefore, not fulfilling them does not mean that project did not perform. (compare also recommendations)

⁶ Basing on explanatory note in the Annex, in-stream of Ulz river at Chuluunkhoroot water monitoring post has been trapped in recent years. In project year one, water resource is determined in detail and indicators and targets will be revised.

				As of 2012	As of 2014		by the project's
Objective and Components	Indicator	Baseline	Midterm evaluation	Targets/End of Project	Source of verification	Risks and Assumptions	
			% of Target Fulfilled				
Component 1: Landscape Level integrated land use and water resources monitoring and planning system focused upon reduction of ecosystem vulnerability to climate change	1. Number of integrated strategies/management plans for river basins approved and adopted by National and Aimag Governments ⁷	Operational integrated strategies/management plans for river basins(or sub-basins): 0	More than 100% , One IWRM plan adopted by all 3 target Aimags (and implementation initiated from the 2015. Seventeen EbA programs developed for each target soum in Kharkhiraa-Turgen and Ulz river basins and endorsed to 17 soum's Parliament.	Operational integrated strategies/management plans for river basins: at least 2	MEGDT and Project reporting and evaluation	Protected area expansion is approved by government structures (this will be alleviated through the participatory planning processes implemented in Component One)	
	2. Number of Aimag governments monitoring, assessing, and reporting to MEGDT and relevant agencies (water authority, National Climate Change Coordination Office) on integrated river basin management measures	Number of Aimag Governments implementing integrated strategies/management plans for river basins: 0	More than 100%, Two Ulz RBA and Uvs lake – RBA Three Meteorology offices of Dornod, Uvs and Khentii aimag, Five Governor's Offices of Dornod, Uvs, Khentii, Zavkhan and Khuvsgul aimag	Number of Aimag Governments implementing integrated strategies/management plans for river basins: at least 3	National, provincial and district legislation		
	3. Guidelines for IWRM address climate risks and vulnerability and integrate adaptation measures and EBA approaches	Current guidelines do not address adaptation and EBA issues explicitly	More than 100% , Guidelines for IWRM address climste risks and landscape level Soum EbA Plans are also in support of the implementation of IWRM plans for RBs.	Guidelines for IWRM that address climate change risks	National, provincial and district legislation		
	4. Total hectares included within protected areas system in the two project sites ⁸	Altai Mountains / GLB: 3,742,000 ha Kharkhiraa,Turgen watershed: 80,000 ha Eastern Steppe: 4,267,600 ha Ulz watershed: 312,000 ha	Fulfilment rate about 7%. Not fulfilled. Good progress has been made in enlarging the network of protected areas: 2014 The protected area has increased almost of 6,000 km2 (600,000 hectares). It's 13% of Ulz, Kharkhiraa-Turgen river basins area.	Altai Mountains / GLB: 3,942,000 ha Kharkhiraa,Turgen watershed: 100,000 ha Eastern Steppe: 4,467,600 ha Ulz watershed: 375,000 ha			

Outputs:

- Ecological and socio-economic Assessments (Baseline studies) as a basis for development of Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (Kharkhira/Turgen,Ulz river basin)
- Economic valuations completed comparing the landscape level costs and benefits of EBA.
- Ecosystem-based Climate Change Adaptation strategies for landscapes and river basins (Kharkhiraa/Turgen and Ulz river basins) are developed

⁷ These indicators are uncontrollable however, which does not mean disapproval of the project implementation

⁸By project close, the National Government and each Aimag within the Altai/GLB and Eastern Steppe landscapes will have adopted the EBA strategic process as formal policy

Objective and Components	Indicator	Baseline	Midterm evaluation	Targets/End of Project	Source of verification	Risks and Assumptions
			% of Target Fulfilled			
Component 2: Implementing Landscape level adaptation techniques to maintain ecosystem integrity and water security under conditions of climate change	1. Number of Soums in target area integrating EBA measures/IW RM into their annual land-use planning and in Soum development plans and strategies.	Total number of Soums in target area considering integrated River Basin Management in their annual land-use planning and in Soum development plans and strategies: 0	100% - Target fulfilled. 17 soums	Total number of Soums in target area considering integrated River Basin Management in their annual land-use planning and in Soum development plans and strategies: 17	Project reporting and evaluation Monitoring and reporting by national and local authorities and project stakeholders	Capacity of Aimag and Soum level stakeholders will match project activity demands (this will be alleviated by a project capacity building strategy, including national/local mentoring program) Proposed interventions are able to deliver EBA results (this will be alleviated by strategic and participatory planning implemented under Component One that will identify and prioritize actions based upon local needs.)
	2. Number of EbA interventions for which current and future costs and benefits have been calculated: a. Number of rehabilitated springs b. Increased length and discharge of rehabilitated springs	0 TBD	n/a for 2014, since the indicator has been newly integrated into the Results framework in April 2015 following up the recommendations of the MTR conducted between November 2014 and January 2015.	5		
	3. Decreased fuel consumption by local public service buildings for heating, %	Average coal consumption for heating of public buildings in each soum: 1.Governor's office along with cultural center 200 tonn/year 2.Hospital 40 tonn/year 3.Kindergarden 30 tonn/year 4.School 100 tonn/year As of 2014 of 2013	n/a for 2013, since the indicator has been newly integrated into the Results framework in April 2015 following up the recommendations of the MTR conducted between November 2014 and January 2015. Currently, 68 public buildings (soum administration offices, schools, hospitals, indergartens) have been equipped with several automatic instruments including thermometers and manometers to ensure and monitor proper heating mode of central systems for fuel efficiency. According to the latest assessment made by the National consultant, fuel consumption was approximately decreased by 15 percent.	15% decrease		
	4. Improved use of surface water resources in replacement of ground water:		a)Drip irrigation systems with water meters were installed in 2 project sites in order to improve efficiency of water usage for	a) Total extraction for:	Monitoring by national and	

	<p>a) Amount of surface water extracted for irrigation in project sites (cubic meter)</p> <p>b) Number of monitored wells increasing ground-water consumption efficiency in project sites⁹</p> <p>c) Number of Small scale Rain and snow melt Water harvesting</p>	<p>a) Total extraction for:</p> <ul style="list-style-type: none"> • Kharkhiraa,Turgen: 3000 tonn/ha for potato • Ulz: 2400 tonn ha for potato 0 <p>b) Monitored/efficient wells:</p> <ul style="list-style-type: none"> • Kharkhiraa/Turgen: 0 • Ulz: 0 (not been used since was broken) <p>c) No water harvesting activities</p>	<p>agricultural irrigation. Site responsible water users are keeping records on water consumption in order to compare efficiency of drip and regular irrigation systems. Collected data will be used for further replication. National consultant's assessment shows drip irrigated lands used 3.1-3.3 times less water as used to be.</p> <p>b) Less than 10% In 2014, a total of 6 wells were repaired. The project is intending to equip established boreholes with relevant measuring devices and train local hydrological officers.</p> <p>c) 100% In 2014, 2 simple water harvesting structure were constructed in Turgun soum with the volume of 4000 cubic meters. In 2015, small scale engineering water catchment facility with the volume of 18854.0 cubic meters was constructed in Bayandun soum of Dornod aimag. Water reservoir called "dry well" to potentially collect snowmelts and rin water of about a volume of 55 tonnes was established in Naranbulag soum of Uvs aimag. In 2016, Traditional water catchment facility with the volume of 9000 cubic meters for snow and rain water harvesting was constructed in Batnorov soum of Khentii aimag.</p>	<ul style="list-style-type: none"> • Kharkhiraa,Turgen: 960 tonn/ha for potato • Ulz: 720 tonn/ha for potato (Approx. 3.1-3.3 times decreased) (while maintaining sustainable agricultural practices through appropriate irrigation technology) <p>b) Monitored/efficient wells:</p> <ul style="list-style-type: none"> • Kharkhiraa/Turgen: 14 • Ulz: 20 (Approx. 10% increase) <p>c) Number of small water harvesting reservoirs</p>	<p>local authorities and project stakeholders</p> <p>EBA strategies and plans</p> <p>Project reporting and evaluation</p>	
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⁹Indicator may include national, provincial, and/or district designated protected areas.

<p>5. Land use practices and climate change resilience improved as indicated by:</p> <p>a) Total hectares of riparian and wetland habitat restored with native vegetation within project sites</p> <p>b) Springs protected with livestock enclosures, Livestock watering and access to creeks managed with appropriate facilities/fencing</p> <p>c) Total area with improved pasture land management (rotational use, pasture irrigation, carrying capacity)¹⁰</p> <p>d) Areas with Reforestation and improved forest management in Western target areas</p>	<p>a) Total hectares restored riparian/wetland:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 0 ha • Ulz: 0 ha <p>b) –</p> <p>c) Total hectares with EBA grazing practices:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 0 ha • Ulz: 0 ha <p>d) 226 ha as of 2012</p>	<p>a) Less than 1%. Not fulfilled</p> <p>Small scale tree nurseries in Kharkhiraa, Turgen and Ulz river basins covering 10 ha of riparian area. In 2014, a total of 5 hectares of area have been rehabilitated along the river Ulz and Kharkhiraa</p> <p>b) 100%</p> <p>A total of 12 springs were protected in 2014 applying. As a result, a total of 117,000 hectares¹¹ of pasture land were supplied with required water resources. The protected springs have been providing more than 500 rural populations as well as 69,500 livestock with drinking water.</p> <p>c) More than 100%</p> <p>117,000 ha</p> <p>d) More than 100%</p> <p>254 ha</p>	<p>a) Total hectares restored riparian/wetland:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 1,250 ha • Ulz: 2,250 ha <p>b) Approx. 30% increase</p> <p>c) Total hectares with EBA grazing practices:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 150,000 ha • Ulz: 1,200,000 ha <p>d) 294 ha (Approx. 30% increase)</p>	<p>Monitoring by national and local authorities and project stakeholders</p> <p>EBA strategies and plans</p> <p>Project reporting and evaluation</p>	
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¹⁰ Determined by total hectares not exceeding annual carrying capacity limits as measured by the national carrying capacity network. Project will ground-truth findings using finer-scale vegetation plots and water course investigations to appraise pasture biomass and water resources integrity at grazing management improvement sites. Total watershed area: Ulz project site (37,962 km²), Kharkhiraa/Turgen project site (5,264 km²)

¹¹ It is not clear, how the figures were calculated

	6. Number of increased income of households engaged with local adaptation measures in 17 soums 7. Number of Small Enterprises established and operating successfully (tourism, processing dairy/ livestock products, agriculture, fuel efficiency, building blocks etc.) 8. Hydrological monitoring is strengthened	Number of households below living standard: TBD 0 Monitoring posts for glacial run-off in Western project area: 0	6. Not measured. Not to be measured during MTR 7. Fulfilment less than 50% 558 8. 100% One Glacier Observation Post was established in Turgan Mountains. In total, 3 surface water monitoring posts (1 in Kharkhiraaa, the west, 2 in Ulz, eastern target area) newly established with support of the project in addition to existing ones (in the west 3, in the east 3) in 2013.	Number of households below living standard: Approx. 10% average decrease At least 160 At least 1 more monitoring post for glacial run-off in established Water resources monitoring network expanded (at least 2 more gauges) in project target areas	Aimag annual reports Soum statistics data Project reporting and evaluation	
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Outputs:

- Capacities of rural communities for monitoring natural resources and climate change impacts and for adaptive management in two watersheds strengthened
- Suite of physical techniques to improve ecosystem resilience established in two critical watersheds.
- Regulatory and financial management techniques for improving climate change resilient livelihood strategies

Objective and Components	Indicator	Baseline	Midterm evaluation	Targets/End of Project	Source of verification	Risks and Assumptions
			% of Target Fulfilled			
Component 3: Strengthening Capacities/Inst	1. Glacier and snow depth monitoring system introduced& operational	Kharkhiraa, Turgan river basin: No monitoring system of glacier and snow depth: 0	1.100% , 1	Glacier and snow depth monitoring system introduced& operational: 1	Hydrological data reported by existing and new monitoring station	Implementation of River basin management plans is included in budget

<p>institutions to support EBA strategies and integrated river basin management, their replication and mainstreaming in sector policies</p>	<p>2. Number of River Basin Administrations established and strengthened in target areas</p> <p>3. River Basin Councils and sub-councils established and strengthened in target areas</p> <p>4. Number of staffs of relevant agencies and local governments trained in river basin management guidelines</p>	<p>Operational RBAs: 0</p> <p>River Basin Councils established and strengthened in target areas: 0</p> <p>Number of staffs of relevant agencies and local governments trained in river basin management guidelines: 0</p>	<p>2.100% 2</p> <p>3.100% More than 3</p> <p>4. More than 100% 110</p>	<p>Operational RBAs: 2</p> <p>River Basin Councils established and strengthened in target areas: at least 3</p> <p>Number of staff of relevant agencies and local governments trained in river basin management guidelines: at least staff of relevant agencies in 21 Aimags, and members of existing river basin councils, and staff of newly established river basin administration</p>	<p>Project reporting and Evaluation</p>	<p>planning and allocation</p> <p>(The GOM budget has and will likely increase significantly over the project period).</p>
	<p>5. National mainstreaming of EBA as indicated by:</p> <ul style="list-style-type: none"> Number of official government policy documents adopting EBA principles/practices Amount of annual government spending to support application of EBA principles and practices nationally Number of National Climate Change Authority EBA policy documents mainstreaming EBA within sectoral decision-making frameworks. 	<p>Number of sector policy documents revised and amended to consider mainstreaming EBA, landscape level integrated water resources and land-use management: less than 5</p> <p>Total national annual investment in EBA: \$0</p> <p>Number of National Climate Change Authority Policy Documents: 0</p> <p>(2 documents (National Programme and Action Plan on Climate Change) exist, but do not explicitly address EBA (in this terminology))</p>	<p>5. Less than 30%, The main EbA policy-Strategic priorities to implement EbA measures for 2 target eco regions was referenced to National MARCC policy document developed in 2014. Moreover the published EbA policy document was distributed to participants of National workshop of soum Governors held in 30 October, 2014 in the Parliament House of Mongolia.</p> <p>More than 100%, The target aimag and soums committed a total of USD 3.3 million (2.8 for Ulz, 0.5 in Kharkhiraa/Turgen) for implementation of EbA pilot measures reflected in the IWRM Plans. These amounts constitute 2.8% and 19.1% of the total proposed budget of IWRM Plans for Kharkhiraa, Turgen sub-river basin and Ulz river basin respectively.</p> <p>0, Three series of national workshops to discuss the draft National Climate Change Adaptation program for Agriculture, Water resource& Forest sector was held in 2014 co-organized with CCCO and PIU with the involvement of key decision makers& experts of 3 development sectors above. During the workshops, the NPC& all 3 experts of PIU gave their comments to reflect EbA concepts& measures into the programmes. Also the main EbA policy-</p>	<p>Number of sector policy documents revised and amended to consider mainstreaming EBA, landscape level integrated water resources and land-use management: considering priority actions, at least 7 (including pasture, agriculture)</p> <p>Total national annual investment in EBA: \$100,000</p> <p>Number of National Climate Change Authority Policy Documents (Adaptation Strategies) at least 3</p>	<p>National government budget analysis conducted as part of the project support valuation of ecosystem services studies. May include re-alignment of existing spending to support EBA implementation.</p> <p>NCCA reports</p> <p>Project reporting and evaluations</p>	

			Strategic priorities to implement EbA measures for 2 target eco regions were delivered to the workshop participants.			
--	--	--	--	--	--	--

Outputs:

- Ecosystem-based adaptation approaches/integrated river basin management mainstreamed in national resource use planning and implementation mechanisms, and sector policies
- Institutional structure for river basin management integrating climate change risks (Administration and Council) established and operational in the target areas as model for replication
- Best practices are identified and program for up-scaling best practices developed and implemented

ANNEX B: LIST OF DOCUMENTS TO BE REVIEWED BY THE EVALUATORS

1. AF Concept and/or Proposal, Project Document, and Log Frame Analysis (LFA)
2. UNDP Environmental and Social Screening results
3. Project Implementation Plan
4. Implementing/Executing partner arrangements
5. List and contact details for project staff, key project stakeholders, including Project Boards, and other partners to be consulted
6. Project sites, highlighting suggested visits
7. Project Inception Report
8. Mid Term Review (MTR) Report
9. Annual Project Performance Reports (PPR)
10. Project budget and financial data
11. Audit reports
12. Project Tracking Tool, at the baseline and at the mid-term
13. UNDP Development Assistance Framework (UNDAF)
14. UNDP Country Programme Document (CPD)
15. UNDP Country Programme Action Plan (CPAP)
16. Oversight mission reports
17. All monitoring reports prepared by the project
18. The following documents will also be available:
19. Project operational guidelines, manuals and systems
20. Minutes of the Ecosystem-based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia project Board Meetings and other meetings (i.e. Project Appraisal Committee meetings)

ANNEX C: EVALUATION QUESTIONS

(Note: This is a generic list, to be further detailed with more specific questions by CO and UNDP GEF Technical Adviser based on the particulars of the project. Refer to Annex 4 of the TE Guidance for a completed, sample evaluation criteria matrix)

This Evaluation Criteria Matrix must be fully completed by the consultant and included as an Annex to the TE report.

Evaluative Criteria Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the AF, and to the environment and development priorities at the local, regional and national levels?			
•	•	•	•
•	•	•	•
•	•	•	•
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?			
•	•	•	•
•	•	•	•
•	•	•	•
Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?			
•	•	•	•
•	•	•	•
•	•	•	•
Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?			
•	•	•	•
•	•	•	•
•	•	•	•
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?			
•	•	•	•
•	•	•	•

ANNEX D: RATING SCALES

<i>Ratings for Effectiveness, Efficiency, Overall Project Outcome Rating, M&E, IA & EA Execution</i>	<i>Sustainability ratings</i>	<i>Relevance ratings</i>
6. Highly Satisfactory (HS): no shortcomings 5. Satisfactory (S): minor shortcomings 4. Moderately Satisfactory (MS): moderate shortcomings 3. Moderately Unsatisfactory (MU): significant shortcomings 2. Unsatisfactory (U): major shortcomings 1. Highly Unsatisfactory (HU): severe shortcomings	4. Likely (L): negligible risks to sustainability 3. Moderately Likely (ML): moderate risks 2. Moderately Unlikely (MU): significant risks 1. Unlikely (U): severe risks	2. Relevant (R) 1. Not relevant (NR)
<i>Additional ratings where relevant:</i> Not Applicable (N/A) Unable to Assess (U/A)		

ANNEX E: EVALUATION CONSULTANT CODE OF CONDUCT AND AGREEMENT FORM

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation Consultant Agreement Form¹²

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultant: _____

Name of Consultancy Organization (where relevant): _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at place on date

Signature: _____

¹²www.unevaluation.org/unegcodeofconduct

ANNEX F: EVALUATION REPORT OUTLINE¹³

- i. Opening page:
 - Title of UNDP supported AF financed project
 - UNDP and AF project ID#s
 - Evaluation time frame and date of evaluation report
 - Region and countries included in the project
 - Implementing Partner and other project partners
 - Evaluation team members
 - Acknowledgements
- ii. Executive Summary
 - Project Summary Table
 - Project Description (brief)
 - Evaluation Rating Table
 - Summary of conclusions, recommendations and lessons
- iii. Acronyms and Abbreviations
(See: UNDP Editorial Manual¹⁴)
1. Introduction
 - Purpose of the evaluation
 - Scope & Methodology
 - Structure of the evaluation report
2. Project description and development context
 - Project start and duration
 - Problems that the project sought to address
 - Immediate and development objectives of the project
 - Baseline Indicators established
 - Main stakeholders
 - Expected Results
3. Findings
(In addition to a descriptive assessment, all criteria marked with (*) must be rated¹⁵)
- 3.1 Project Design / Formulation
 - Analysis of LFA/Results Framework (Project logic /strategy; Indicators)
 - Assumptions and Risks
 - Lessons from other relevant projects (e.g., same focal area) incorporated into project design
 - Planned stakeholder participation
 - Replication approach
 - UNDP comparative advantage
 - Linkages between project and other interventions within the sector
 - Management arrangements
- 3.2 Project Implementation

¹³The Report length should not exceed 40 pages in total (not including annexes).

¹⁴ UNDP Style Manual, Office of Communications, Partnerships Bureau, updated November 2008

¹⁵ Using a six-point rating scale: 6: Highly Satisfactory, 5: Satisfactory, 4: Marginally Satisfactory, 3: Marginally Unsatisfactory, 2: Unsatisfactory and 1: Highly Unsatisfactory, see section 3.5, page 37 for ratings explanations.

- Adaptive management (changes to the project design and project outputs during implementation)
 - Partnership arrangements (with relevant stakeholders involved in the country/region)
 - Feedback from M&E activities used for adaptive management
 - Project Finance
 - Monitoring and evaluation: design at entry (*), implementation (*), and overall assessment (*)
 - Implementing Agency (UNDP) execution (*) and Executing Agency execution (*), overall project implementation/ execution (*), coordination, and operational issues
- 3.3** Project Results
- Overall results (attainment of objectives) (*)
 - Relevance (*)
 - Effectiveness (*)
 - Efficiency (*)
 - Country ownership
 - Mainstreaming
 - Sustainability: financial resources (*), socio-economic (*), institutional framework and governance (*), environmental (*), and overall likelihood (*)
 - Impact
- 4.** Conclusions, Recommendations & Lessons
- Corrective actions for the design, implementation, monitoring and evaluation of the project
 - Actions to follow up or reinforce initial benefits from the project
 - Proposals for future directions underlining main objectives
 - Best and worst practices in addressing issues relating to relevance, performance and success
- 5.** Annexes
- ToR
 - Itinerary
 - List of persons interviewed
 - Summary of field visits
 - List of documents reviewed
 - Evaluation Question Matrix
 - Questionnaire used and summary of results
 - Evaluation Consultant Agreement Form
 - *Annexed in a separate file:* TE audit trail
 - *Annexed in a separate file:* Terminal AF Tracking Tool, if applicable

ANNEX G: EVALUATION REPORT CLEARANCE FORM

(to be completed by CO and UNDP GEF Technical Adviser based in the region and included in the final document)

Evaluation Report Reviewed and Cleared by

UNDP Country Office

Name: _____

Signature: _____ Date: _____

UNDP GEF RTA

Name: _____

Signature: _____ Date: _____

ANNEX H: TE REPORT AUDIT TRAIL

The following is a template for the evaluator to show how the received comments on the draft TE report have (or have not) been incorporated into the final TE report. This audit trail should be included as an annex in the final TE report.

To the comments received on (8 Aug 2017) from the Terminal Evaluation of (“Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia” (MON/12/301) project) (UNDP PIMS #4505)

The following comments were provided in track changes to the draft Terminal Evaluation report; they are referenced by institution (“Author” column) and track change comment number (“#” column):

Author	#	Para comment location	No./	Comment/Feedback on the draft TE report	TE team response and actions taken

Prepared by:

_____ Date:_____

Ts. Tuya, National Project Coordinator

Agreed by:

_____ Date:_____

B.Bunchingiv, Programme officer, UNDP CO

Approved by:

_____ Date:_____

Daniela Gasparikova, DRR, UNDP CO

Annex II: Itinerary of Activities TE Mission

Date/time	Activity	Responsible parties/persons	PIU
October 2, Monday 10.50	Arrival in Ulaanbaatar (UB) Pick up arranged with support of Project implementing Unit (PIU)	Mr. Arun Rijal, International Consultant Ms. Khaliun G., Secretary/translator (TS) PIU Mr. Enkh Amgalan D., Driver	China Int
13.00-14.00	Lunch		
14.00-15.15	Briefing at UNDP Country Office, Mongolia Ms. Beate Trankmann, UN RC/UNDP RR Ms. Bunchingiv B. Program Officer on Climate change	DRR, PO, NPC	U
15.30-16.15	Mr. Batbayar Ts. Vice Minister of MET and Chairman of Project Board		In of sta
16.15-17.00	Ms. Javzan V., Senior Officer, Department of Monitoring and Evaluation and Internal auditing, Project Board member	IC, NC, PIU, all relevant parties	
17.15-18.00	Mr. Batjargal Z., National focal point of UNFCCC and Green Climate Fund in Mongolia,		
October 3, Tuesday 08.30-09.00	Security briefing meeting	UN security staff	U
09.00-10.30	Batchuluun Y., Professor, University of Pedagogical Sciences Mr. Jambalija Ya., Senior researcher, Institute of Geography & Geo-Ecology Gunjidmaa G., Head of Research and Information department, press Institute of Mongolia	IC, NC, PIU, all relevant partners	
10.50-12.00	Meeting at PIU Ms. Tuya Ts., National Project Coordinator (NPC) Mr. Enkhbat M., Administrative and Finance Officer	PIU staffs, NC, IC	P
12.00-13.00	Mr. Tsognasarai D., Community outreach, rural conservation and development expert Ms. Sumiyasuren J., Strategic planning expert Ms. Otgonjargal N., Natural resource policy Expert Ms Khaliun G., Secretary and translator Mr. Enkh Amgalan D., Driver		
15.00-16.00	Lunch Ms. Kenjagul Kh. Senior Officer, Crop Production Policy Implementation Department, Ministry of Food, Agriculture and Light Industry, Project Board Member	IC, NC, PIU, all relevant parties	Me
16.15-17.00	Ms. Dulguun E., Officer in Charge of UNDP Projects, Division of Debt management, Ministry of Finance, Board Member	IC, NC, PIU, all relevant parties	Me
October 4, Wednesday 09.00-10.20	Ms. Tsendsuren B. Freelance consultant on climate change Ms. Munkhchuluun B., AHEC program manager, WWF Mongolia Ms. Adiya Ya., Director of Institute of General and Experimental Biology, collaborator of TNC and WCS on biodiversity research	IC, PIU, all relevant parties	U

10.30-11.30	Lunch		
14.20-20-20	Flight to Ulaangom city, Uvs aimag		

Field Mission to West sites: Uvs aimag

Time	Activity	Specifics	R
Day 1-October 4 (Wednesday)			
17:00 20:25	Depart for Ulaangom city, Uvs aimag (flight) Arrival in “Deglii tsagaan” airport of Uvs aimag (Ulaangom city) Leave the airport for Ulaangom city (15km, 20 minutes) Check in the “Achit nuur” hotel Dinner in Ulaangom city	Hunnu Mongolia airline Destination: Ulaangom city Departure time-17:00 Arrival time-20:25	Pick Uvs loca
Day 2-October 5 (Thursday)			
09:00~10:30	Meeting with relevant Aimag stakeholders: Aimag Governor’s Office, River Basin Administration, Hydro-Meteorological Office <i>/Please refer to Appendix. List of participants/</i> <i>Coffee and tea will be served at the meeting.</i> Meeting with relevant stakeholders of Uvs Aimag: - Mr.Batsaikhan.D, Governor of Uvs aimag - Mr.Bat-yeruult.B, Director of Development Policy Division of Governor’s Administration Office and Project Board member - Mr.Ganbold.Z, Senior officer of Development Policy Division of Governor’s Administration Office - Mr.Ankhbayar.M, Head of Uvs Lake-Tes River Basin Administration (RBA) - Mr.Batbayar.B, Head of Environment, Nature and Tourism Office - Ms.Purevsuren.B, Head of Hydro-Meteorological Office		Mis men
10:40~11:40	Visit “Chuluut” protected spring in Ulaangom city (3 km from the center of Ulaangom city) (Coffee and tea will be served)	<ul style="list-style-type: none"> Spring rehabilitation techniques (method by double protection) 	Mr. Loc Uvs
11:50~12:50	Visit the Technology transfer site for ecologically oriented agriculture and meet “Dasan zohitsokhui/ Adaptation” community group in Ulaangom soum (5 km from the center of Ulaangom city)	<ul style="list-style-type: none"> Water saving techniques and drip irrigation system are introduced and monitored Strawberry planting is introduced Tree planting as wind breaker and soil protection Vegetable seed production only 	Mr. of “ zokh com Mr. Env insp city
13:00~14:00	Lunch in Ulaangom city		
14:10~15:00	Visit Uvs Lake-Tes River Basin Administration Office in Ulaangom city (Coffee and tea will be served)	<ul style="list-style-type: none"> Briefing on Project support&cooperation, implementation status of and improved reporting and 	Mr. Hea RBA
15:10~16:10	Visit Hydro-Meteorological Office in Ulaangom city	<ul style="list-style-type: none"> Briefing on Project support&cooperation, and Climate change and its 	Ms. Hea Met
16:20~17:20	Visit and meet with eco club members in “Chandmani” eco-school in Ulaangom city /Coffee and tea will be served/	Eco initiatives by Eco school members <ul style="list-style-type: none"> Introduction on activities of Eco clubs and EbA and CC curriculum, exhibition of products made by school 	Eco teach

Time	Activity	Specifics	R
17:30~18:20	Dinner in Ulaangom city		
Day 3-October 6 (Friday)			
09:00~11:00	<p>Leave Ulaangom city for Tarialan soum (35 km from Ulaangom city, will take approx. 1 hour)</p> <p>Visit Water distribution channel in Tarialan soum constructed in cooperation with Soum and Aimag Water User Groups.</p> <p>Visit technology transfer site for fodder planting applying sprinkling irrigation and meet “Altan tevsh” community group members.</p> <p>/Coffee and tea will be served/</p>	<ul style="list-style-type: none"> The channel length is 1400 meter. It contributed to the limitation of uncontrolled and unsustainable water use practices. Water saving technology transfer, fodder planting for Dzud disaster risk reduction 	Rep Tari Gov Mr.7 Leac “Alt com
11:00~12:20	<p>Visit Environmental unit of Tarialan soum for introduction on sustainable pasture use</p> <p>Meet Women community group that produces handmade wool products.</p> <p>Visit heat-only boiler for soum public buildings</p> <p>Visit Water distribution structure for agricultural irrigation constructed in socialist era.</p>	<ul style="list-style-type: none"> Rotational pasture use and monitoring Income generation through livelihood diversification 	Mr.7 Sou Ms.7 Leac sava com
12:30~13:30	Lunch in Tarialan soum		
13:40~15:30	<p>Leave Tarialan soum for “Teel” dam of Naranbulag soum (20 km from Tarialan soum)</p> <p>Stop on way in the “Teel” dam that is meander point of Kharkhiraa river</p> <p>Visit pilot "dry well"-rain and surface water collection reservoir and meeting with representatives from soum Water Users Group</p>	<ul style="list-style-type: none"> Brief information on Landscape and Water users groups Water harvesting techniques, Drip irrigation system, Fodder plantation based on accumulated water resources 	Mr.7 staff RBA Mr.7 of “I com
15:40~16:30	<p>Leave Teeliin boom for snow& rain water harvesting catchment (20 km from Teeliin boom)</p> <p>Visit pilot site of snow& rain water harvesting catchment and meet representatives of “Bumantuya” community groups</p> <p>/Coffee and tea will be served/</p>	<ul style="list-style-type: none"> Brief information on the reservoir and usage of the accumulated water for fodder plant irrigation 	Mr.6 Mer “Bu com
16:40~18:00	<p>Leave the pilot site of snow& rain water harvesting catchment for Uvs Lake (20km)</p> <p>Visit Uvs Lake monitoring post</p> <p>Bird watching point</p>	<ul style="list-style-type: none"> Ground water monitoring 	Rep Adm Lake and Met Offi
18:00~20:00	Dinner at tourist camp “Uvs Lake” and visit the exhibition stand on Handmade products (woolen, wooden, diary and hay/fodder making etc.)		Rep Aim
20:00~20:30	Back to Ulaangom city (35km)		
Day 4-October 7 (Saturday)			
08:30~13:00	<p>Check out the hotel</p> <p>Leave Ulaangom city for “Yoliin am” valley (75 km from Ulaangom city, will take approx. 2 hours)</p> <p>Visit rehabilitated water channel for ensuring pasture water supply and meet with Local herders and communities. (Coffee and tea will be served).</p> <p>Leave “Yoliin am” valley for Ulaangom city</p>	Rehabilitation of water structures for channeling rain, snow and flood water from “Yoliin am” valley for improved pasture water supply (constructed in 2015)	Erde Hea Gron Mr.1

Time	Activity	Specifics	R
13:00~14:00	Lunch in Ulaangom city		Her
14:10~14:40	Leave for the Airport		
16:10	Departure for UB (transit through Khovd aimag).	Aero Mongolia airlines	
20:00	Arrival in Ulaanbaatar city.	Destination: Ulaanbaatar city Departure time: 16:10 Landing time: 20:00	

Field Mission to East: Khentii and Dornod Aimags

Time	Activity	Specifics	
Day 1- October 8			
8:00	Leave Ulaanbaatar city for Chingis city, Khentii aimag (334 km from Chingis city, will take approx. 6-7 hours) Lunch break will be during travel at local dining place.		Mission team me
15:00	Arrival in Chingis city		
15:15-16:30	Meeting with relevant Khentii aimag stakeholders: Aimag Governor's Office, RBA, EPA, Hydro-Meteorological Office <i>/Please refer to Appendix. List of participants/</i> Coffee and tea will be served at the meeting. <i>Khentii stakeholders:</i> - Mr.Ganbayamba.N, Aimag Governor - Mr.Munkh-Erdene.E, Director, Division of Development Policy, Governor's Administration office and Project Board member - Mr.Darkhantur.B, Head of Environment, Nature and Tourism Office - Ms. Chuluun.L, Director, Hydrology, Meteorology and Environment Office, Project Coordinator of Khentii Aimag - Ms.Sanchir.B, Wildlife Officer, Office of Environment - Mr. Baatarsukh.T, Ground water Officer, Kherlen River RBA	Interview with the project stakeholders at Aimag level at Meeting room of Governor's Administration Office. • Briefing on Project support & cooperation, and water resource related challenging issues in Khentii aimag	
16:40	Leave Chingis city for Batnorovsuum (100 km)		
18:40	Arrival in Batnorovsuum		
19:00	Dinner and overnight stay in Batnorovsuum		
Day 2- October 9			
08:00	Breakfast in local inn, Batnorovsuum		M
08:30-09:00	Visit pilot Fuel efficient briquette workshop and meet "Gal uduu"/ Adaptation" community group	• Fuel efficient techniques	M le A g
09:00-09:40	Visit pilot Household level intensified cattle workshop/farming and meet "Batnoroviinkhishig/ Adaptation" community group	• Improvement of preserving genepool of Native cattle, Semental' breed and Montbéliarde cattle breed • Fodder production • Livestock feeding • Meat packaging for market • Fodder plantation	M L "T A g
09:50-10:50	Visit pilot Comprehensive EBA measures and meet/interview soum authority and Adaptation" community group	• Soum level EBA advocacy and Post adaptive measures	

11:00	<ol style="list-style-type: none"> 1. Small scale water harvesting catchment with rest area 2. Spring protection 3. Ecologically oriented agriculture 4. Integrated management of water use at community level 	<ul style="list-style-type: none"> • Water saving techniques and drip irrigation system are introduced and monitored • Tree planting as wind breaker and soil protection • Vegetable seed production only for Green houses tested and rotational planting is initiated • Alternative use of water harvesting catchments as a refreshment/ rest area • Spring rehabilitation techniques • “Double protection” techniques 	M S M E in
13:00	Leave Batnorovsuum for Norovlinsuum (110 km)	<ul style="list-style-type: none"> • Protection of upstream of UlzRiver for riparian pasture management 	
13:30	Stop on way to "Bagaburd" upstream of Ulz river for rehabilitatedprotection for upstream of Ulz river (18km from Norovlinsuum)		M co K
13:30:14:30	Arrival in Norovlinsuum	The exhibition will be held in local cafeteria.	
14:40-15:10	Lunch at local cafeteria and visit the exhibition stand on Handmade products (woolen, wooden, diary, pickled vegetables etc.)	<ul style="list-style-type: none"> • Resolve water supply for green areas of organization to use as effecting change of behavior of people. 	M L “p A gr
15:20-15:40	Visit pilot kindergarden for introduction on small scale roof water harvesting structure and meet with representatives of beneficiaries on woolen products.		
15:50-16:20	Visit local meteorological station	<ul style="list-style-type: none"> • Ground water monitoring 	M D ki
16:40	Leave Norovlinsuumfor Bayan-Uulsuum(75 km)	<ul style="list-style-type: none"> • Surface water monitoring 	
18:00	Stop on way to “Kharmogoit” in the near of Norovlinsuum that is the place of relocation of marmots in 2015. (Community member and voluntary ranger)	<ul style="list-style-type: none"> • Monitoring techniques of marmot 	M W
18:30	Arrival in Bayan-Uulsuum		M ra M le
	Dinner and overnight stay in Bayan-Uulsuum		
Day 3- October 10			
08:00	Breakfast in local inn, Bayan-Uulsuum		M
09:00-10:30	<p>Meeting with relevant Dornodaimag stakeholders: Aimag Governor’s Office, RBA, EPA, Hydro-Meteorological Office <i>/Please refer to Appendix. List of participants/</i> Coffee and tea will be served at the meeting.</p> <p><i>Dornod stakeholders:</i> Ms.Ariyazul.M, Director, Department of Development Policy, Governor’s Administration Office and Project Board member - Ms.Munkhsaikhan.B, Head of Forest unit, Office of Environment - Ms. Tuyabold.B, Water Supply and Assessment Officer, Office of</p>	<p>Interview with the project stakeholders at Aimag level at Meeting room of Inter-suum forest unit of Baya-Uulsuum.</p> <ul style="list-style-type: none"> • Briefing on Project support & cooperation, and water resource related challenging issues in Dornodaimag • IWRM plan implementation status, reporting system will be presented by 	

10:40-11:40	Environment -Ms. Altannavch.N, Director, Hydrology, Meteorology and Environment Office, Project Coordinator of DornodAimag -Mr. Bayartogtokh.B, Head of Ulz RBA Visit inter-soum forest unit of Baya-Uulsoum for introduction on the reduction of seed moisture content to the recommended levels for seed storage, using techniques which will not be detrimental to seed viability. (Officers of unit)	during site visits • Seed drier with associated small scale equipment
12:00-13:00	Visit Exhibition stand on Handmade products (woolen, diary, pickled vegetables) and meet with representatives of beneficiaries.	The exhibition will be held in the meeting room in Inter-soum forest unit.
13:00	Lunch at local cafeteria.	
17:00	Leave Bayan-Uulsoumfor Bayan-Adragasoum(172 km)	
17:00-17:40	Arrival in Bayan-Adragasoum	• Water saving techniques and drip irrigation system are introduced and monitored
17:50-18:30	Visit pilot Technology transfer site for ecologically oriented agriculture and meet “Urjikh” community group in Bayan-Adragasoum	• Strawberry planting is introduced
19:00	Visit “A lonely tree” eco stop and local museum	• Tree planting as wind breaker and soil protection
	Dinner and overnight stay in “Khatdiinurguu” tourist camp inBayan-Adragasoum	• Vegetable seed production only for Green houses tested and rotational planting is initiated
		• Drip irrigation system

Day 4- October 11

08:00-08:30	Breakfast in local inn, Bayan-Adragasoum	
08:40	Leave Bayan-Adragasoumfor Ulaanbaatar city (500 km from Bayan-Adragasoum, will take approx. 7-8 hours) Lunch will be provided during travel at local dining place.	
16:00	Arrival in Ulaanbaatar city	

Date/time	Activities	Responsible Parties/person	Place/Note
October 13, 2017			
09.00-09.40	Dr. Dagvadorj D., Former NPD and Director of Climate Change and Development Academy	IC, PIU, relevant parties (NC absent)	At Climate Change and Development Academy
10.00-11.00	Mr. Yeruult B., Director of department of Climate Change and International Cooperation and National Project Director Mr. Battulga N., Head of Division of River Basin Administration and alternate National Project Director	IC, PIU, relevant parties (NC absent)	‘Khaan’ meeting room of MET
11.30-12.10	Mr. Davaa G., Senior researcher of Water Study sector	IC, PIU, relevant parties (NC absent)	Meteorology Department

13.00-14.00	Lunch		UNDP CO
14.00-15.00	Ms. Beate Trankmann, Resident Coordinator of UN and Resident Representative of UNDP Ms. Daniela Gasparikova, Deputy Resident Representative, UNDP Ms. Bunchingiv B., Program Officer on Climate Change	RR, DRR, PO, IC (NC absent)	
October 14, 2017 09.00	Leave for airport Drive IC to airport	IC, Mr. Enkh-Amgalan D., Driver	Chinggis Khaan International Airport

Annex III: Persons Interviewed

№	Participant's name	Position /Organization	Contact
Ministry of Environment and Tourism (MET)			
1.	Ts.Batbayar	Deputy minister of Environment and Tourism and Chairman of Project Board	266286, 91926464
2.	B.Yeruult	Director, Division of Climate Change and International cooperation, MET and National Project Director	266197, 99066124
3.	N.Battulga	Director, Division of River Basin Management	99113353
4.	V.Javzan	Senior officer, Department of Monitoring, Evaluation and Internal auditing, Project Board member	99094330
5.	Z.Batjargal	Project former consultant on EBA management issues and coordination/mainstreaming of best practices/ Job title: National focal point of UNFCCC and Green Climate Fund in Mongolia, non formal Advisor on Climate Change for the Minister	99086786
Ministry of Food, Agriculture and Light Industry			
6.	Kh.Kenjegal	Senior Officer, Crop Production Policy Implementation Department, Ministry of Food, Agriculture and Light Industry, Project Board member	261687, 9908-6861
Ministry of Finance			
7.	E.Dulguun	Officer in charge of UNDP projects, Division of Debt management, MF, Project board member	99183308
Information And Research Institute Of Meteorology, Hydrology And Environment / IRIMHE/			
8.	G.Davaa	Senior researcher of Hydrology sector, IRIMHE	99851585
Universities and institutes			
9.	Ya.Jambaljav	Head of , Institute of Geography & Geo-ecology	99132529
10.	Y.Batchuluun	Professor at University of Pedagogical Sciences	
International organizations			
11.	B.Munkhchuluun	AHEC programme manager, WWF Mongolia	99818170
12.	Ya.Adiya	Director of Institute of General and Experimental Biology, collaborator of TNC and WCS on biodiversity research , conservation and management issues	93116264
Freelance consultants			
13.	D.Dagvadorj	Former National project director, Freelance consultant	99246722
14.	B.Tsendsuren	Freelance consultant on climate change	88991184
Media			
15.	G.Amartuvshin	Journalist of Press institute of Mongolia	88008787

Annex IV: Summary Evaluation of Project Achievements by Objectives and Outcomes

The Project logframe in the Project Document was revised in the Inception Report. The present evaluation matrix uses the version contained in the Inception Report and also used by the MTR.

KEY:

GREEN = Indicators show achievement successful at the end of the Project.

YELLOW = Indicators show achievement nearly successful at the end of the Project.

RED = Indicators not achieved at the end of Project.

HATCHED COLOUR = estimate; situation either unclear or indicator inadequate to make a firm assessment against.

Project Objective: To maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land water resource management.

Description	Performance Indicator	Baseline	Target Level at end of project [2017]	Achievements as of October 2017	Rating
Objective: Maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. Main indicator is Mean annual in-stream flow.	Mean annual in-stream maintained or increased in two project sites 1. 30 day average of minimum discharge in warm period	Kharkhiraa River: 1.58 m ³ /sec Turgan River: 0.78 m ³ /sec Ulz River: 0.00 m ³ /sec (at Chuluunkhoroot)	Kharkhiraa River: 1.58 m ³ /sec Turgan River: 0.78 m ³ /sec Ulz River: 0.01 m ³ /sec (at Chuluunkhoroot)	Kharkhiraa River: 2.14 m ³ /sec Turgan River: 0.83 m ³ /sec Ulz River: 0.00 m ³ /sec (at Chuluunkhoroot) Ulz River: 0.09 m ³ /sec (at Bayan-Uul)	HS

	2. Long term mean discharge and annual average discharge in selected year,(.m3/s)	Kharkhiraa River: 5.15 m³/sec Turgen River: 2.55 m³/sec Ulz River: 5.88 m³/sec (at Chuluunkhoroot)					Kharkhiraa River: 5.11 m³/sec Turgen River: 2.48 m³/sec Ulz River: 5.35 m³/sec (at Chuluunkhoroot)			S		
	Ground and surface water quality is meeting Mongolian standards in two project sites		Turgen	Kharkhira	Ulz	Meeting Mongolian standards	Turgen	Kharkhira	Ulz	S		
		Suspended solids MNS4586:1998/ 35mg/l	16.0	40.0	8.5		4.0	32.0	0.8			
		Permanganate COD MNS4586:1998/ 10	1.4	7.0	5.28		0.3	0.8	5.3			
		NH+4 MNS4586:1998	0.42	0.54	0.083		0.15	0.21	0.017			
		Total mineral P MNS4586:1998/0.2 mg/l	0.34	0.45	0.79		0.018	0.075	0.021			
		Total Fe MNS4586:1998/ 0.1 mg/l	0.23	0.14	0.0		0.11	0.33	0.0			
		Decreased soil compaction, g/cm³	13.6 (in 2013)		12.7 (in 2013)		1,11		1,11			
		Changes of aggregates, % (at the layer 0-10cm, 10-20cm) (Dark Brown soil)	>1.0mm-%53.5 1,0-5,0mm-15% 0,5-0,1mm-10.5% <0,1mm-21% (in 2013)		>1.0mm-%51.5 1,0-5,0mm-17% 0,5-0,1mm-8.5% <0,1mm-23% (in 2013)		>1.0mm-%56.5 1,0-5,0mm-20.8% 0,5-0,1mm-7.7% <0,1mm-15%		>1.0mm-%56.4 1,0-5,0mm-22.3% 0,5-0,1mm-7.7% <0,1mm-13.6%			
		Water temperature (Celsius)	7.4	5.8	14.4		7	6.1	13.2			

C1: Landscape Level integrated land use and water resources monitoring and planning system focused upon reduction of ecosystem vulnerability to climate change	1. Number of integrated strategies/management plans for river basins approved and adopted by National and Aimag Governments	Operational integrated strategies/management plans for river basins(or sub-basins): 0	Operational integrated strategies/management plans for river basins: at least 2	EbA strategic priorities implemented in Eastern Steppe and Great Lakes Depression ecoregions -2 (includes Eastern and Western target sites) IWRM plans -3 (Ulz river basin, Uvs lake Tes river basin and Kharkhiraa Turgen sub river basins)	HS
	2. Number of Aimag governments monitoring, assessing, and reporting to MEGDT and relevant agencies (water authority, National Climate Change Coordination Office) on integrated river basin management measures	Number of Aimag Governments implementing integrated strategies/management plans for river basins: 0	Number of Aimag Governments implementing integrated strategies/management plans for river basins: at least 3	10 agencies in total (2 River basin administrations, 3 Meteorological Agencies, 3 Environment and Tourism Agencies 2 Protected Area Administration at Aimag level)	HS
	3. Guidelines for IWRM address climate risks and vulnerability and integrate adaptation measures and EBA approaches	Current guidelines do not address adaptation and EBA issues explicitly	Guidelines for IWRM that address climate change risks	The project developed an amendment reflecting CC trends, its vulnerability and risks to the existing guidance "Methodological guidance to develop IWRM plan" and submitted to Ministry of Environment and Tourism (MET) in 2015 for further discussion. The issue was discussed at National workshop of RBAs which was held on 25-26 May, 2016. IWRM waiting approval from the cabinet and Parliament.	S

	4. Total hectares included within protected areas system in the two project sites	Altai Mountains / GLB: 3,742,000 ha Kharkhiraa, Turgen watershed: 80,000 ha Eastern Steppe: 4,267,600 ha Ulz watershed: 312,000 ha	Altai Mountains / GLB: 3,942,000 ha Kharkhiraa, Turgen watershed: 100,000 ha Eastern Steppe: 4,467,600 ha Ulz watershed: 375,000 ha	Altai Mountains/GLB: State PA 369466+Local PA1,015,665.17ha; Total PA=5127,131.17ha Kharkhiraa, Turgen Watershed: Local PA 440489ha Total PA=520,489.35ha Eastern Steppe: State PA197967.22ha Total PA=4,465,567.22ha Ulz watershed: State PA102563.32ha Total PA=414,563 Note: Total PA is calculation also includes existing PA.	HS
C2: Implementing Landscape level adaptation techniques to maintain ecosystem integrity and water security under conditions of climate change	1. Number of Soums in target area integrating EBA measures/IWRM into their annual land-use planning and in Soum development plans and strategies.	Total number of Soums in target area considering integrated River Basin Management in their annual land-use planning and in Soum development plans and strategies: 0	Total number of Soums in target area considering integrated River Basin Management in their annual land-use planning and in Soum development plans and strategies: 17	17 target soums reflected IWRM into their annual plan and have also developed EbA plans and is in implementation.	HS
	2. Number of EbA interventions for which current and future costs and benefits have been calculated: a. Number of rehabilitated springs b. Increased length and discharge of rehabilitated springs	0 TBD	5	a. Total of 44 springs rehabilitated in target river basins Water flow Length of rehabilitated springs was increased by 0.5-1.5km in average.	HS

	3. Decreased fuel consumption by local public service buildings for heating, %	<p>Average coal consumption for heating of public buildings in each soum:</p> <p>1. Governor's office along with cultural center 200 tonn/year</p> <p>2. Hospital 40 tonn/year</p> <p>3. Kindergarden 30 tonn/year</p> <p>4. School 100 tonn/year As of 2014 Of 2013</p>	15% decrease	Fuel consumption was decreased by 20% through the instalment of monitoring system (manometer, thermometer, safety valve) on 65 heat-only boilers in target 17 soums.	HS
	<p>4. Improved use of surface water resources in replacement of ground water:</p> <p>a) Amount of surface water extracted for irrigation in project sites (cubic meter)</p> <p>b) Number of monitored wells increasing ground-water consumption efficiency in project sites</p> <p>c) Number of Small scale Rain and snow melt Water harvesting</p>	<p>a) Total extraction for:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 3000 tonn/ha for potato • Ulz: 2400 tonn ha for potato 0 <p>b) Monitored/efficient wells:</p> <ul style="list-style-type: none"> • Kharkhiraa/Turgen: 0 • Ulz: 0 (not been used since was broken) <p>c) No water harvesting activities</p>	<p>a) Total extraction for:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 960 tonn/ha for potato • Ulz: 720 tonn/ha for potato <p>(Approx. 3.1-3.3 times decreased)</p> <p>(while maintaining sustainable agricultural practices through appropriate irrigation technology)</p> <p>b) Monitored/efficient wells:</p> <ul style="list-style-type: none"> • Kharkhiraa/Turgen: 14 • Ulz: 20 <p>(Approx. 10% increase)</p> <p>c) Number of small water harvesting reservoirs</p>	<p>Decreased by 20-40% in average in 23 pilot sites covering 41.5 ha.</p> <p>+ Accumulated water in reservoir/catchments-31954 cubic meter</p> <p>b) Monitored/efficient wells as of 2017:</p> <ul style="list-style-type: none"> • Western sites (Kharkhiraa/Turgen)- 14 • Eastern sites (Ulz)- 20 wells respectively <p>C)</p> <ul style="list-style-type: none"> • Engineered water harvesting structure-1, • Traditional water harvesting structure-2, • Rehabilitated channels-2, • Dry well-1 	HS

	<p>5. Land use practices and climate change resilience improved as indicated by:</p> <p>a) Total hectares of riparian and wetland habitat restored with native vegetation within project sites</p> <p>b) Springs protected with livestock enclosures, Livestock watering and access to creeks managed with appropriate facilities/fencing</p> <p>c) Total area with improved pasture land management (rotational use, pasture irrigation, carrying capacity)</p> <p>d) Areas with Reforestation and improved forest management in Western target areas</p>	<p>a) Total hectares restored riparian/wetland:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 0 ha • Ulz: 0 ha <p>b) –</p> <p>c) Total hectares with EBA grazing practices:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 0 ha • Ulz: 0 ha <p>d) 226 ha as of 2012</p>	<p>a) Total hectares restored riparian/wetland:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 1,250 ha • Ulz: 2,250 ha <p>b) Approx. 30% increase</p> <p>c) Total hectares with EBA grazing practices:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 150,000 ha • Ulz: 1,200,000 ha <p>d) 294 ha (Approx. 30% increase)</p>	<p>a) Total hectares restored riparian/wetland as of Sep 2017:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 1,310ha Ulz: 2,270ha <p>b) Kharkhiraa, Turgen: 20 Ulz: 24</p> <p>c) Total hectares with EBA grazing practices as of Sep 2017:</p> <ul style="list-style-type: none"> • Kharkhiraa, Turgen: 155,000 ha Ulz: 1,995,000 ha <p>d) 290 ha as of Sep 2017.</p>	<p>HS</p>
	<p>6. Number of increased income of households engaged with local adaptation measures in 17 soums</p>	<p>Number of households below living standard: TBD</p>	<p>Number of households below living standard: Approx. 10% average decrease</p>	<p>20 household's annual income from the 102 poor families was increased up to above living standards. It constitutes 19.6% decrease in number of households below living standard (Monthly income increase)</p>	<p>HS</p>

	7. Number of Small Enterprises established and operating successfully (tourism, processing dairy/ livestock products, agriculture, fuel efficiency, building blocks etc.)	0	At least 160	Currently 102 Small Grantees and 60 community groups engaging tree nurseries, wool&wood production, ecologically oriented farming etc are cooperating with the project.	HS
	8. Hydrological monitoring is strengthened	Monitoring posts for glacial run-off in Western project area: 0	At least 1 more monitoring post for glacial run-off in established Water resources monitoring network expanded (at least 2 more gauges) in project target areas	<ul style="list-style-type: none"> Glacier monitoring post established -1 Surface water monitoring posts -3 Ground water monitoring posts -3 	HS
C3: Strengthening Capacities/Institutions to support EBA strategies and integrated river basin management, their replication and mainstreaming	1. Glacier and snow depth monitoring system introduced& operational	Kharkhiraa, Turgen river basin: No monitoring system of glacier and snow depth: 0	Glacier and snow depth monitoring system introduced& operational: 1	<ul style="list-style-type: none"> Glacier and snow depth monitoring system introduced& operational -1 	HS
	2. Number of River Basin Administrations established and strengthened in target areas	Operational RBAs: 0	Operational RBAs: 2	<ul style="list-style-type: none"> Uvs lake-Tes RBA & Ulz RBA established & strengthened - 2 	
	3. River Basin Councils and sub-councils established and strengthened in target areas	River Basin Councils established and strengthened in target areas: 0	River Basin Councils established and strengthened in target areas: at least 3	<ul style="list-style-type: none"> RBCs established& strengthened - 3 	HS

	4. Number of staffs of relevant agencies and local governments trained in river basin management guidelines	Number of staffs of relevant agencies and local governments trained in river basin management guidelines: 0	Number of staff of relevant agencies and local governments trained in river basin management guidelines: at least staff of relevant agencies in 21 Aimags, and members of existing river basin councils, and staff of newly established river basin administration	Trained staffs of relevant agencies in 21 Aimags, and members of existing river basin councils, and staff of newly established river basin administrations-645 in overlapping number	HS
	5. National mainstreaming of EBA as indicated by: • Number of official government policy documents adopting EBA principles/practices	Number of sector policy documents revised and amended to consider mainstreaming EBA, landscape level integrated water resources and land-use management: less than 5	Number of sector policy documents revised and amended to consider mainstreaming EBA, landscape level integrated water resources and land-use management: considering priority actions, at least 7 (including pasture, agriculture)	25 policy documents: • EbA strategic priorities-2, • IWRMP-3, • EbA soum action plan-17 • Proposal on extension PA -3	HS
	•Amount of annual government spending to support application of EBA principles and practices nationally	Total national annual investment in EBA: \$0	Total national annual investment in EBA: \$100,000	Since 2014, the government spent 1,781,000US\$ for implementing IWRM and EbA measures in 2 target river basins.	HS

	•Number of National Climate Change Authority EBA policy documents mainstreaming EBA within sectoral decision-making frameworks.	Number of National Climate Change Authority Policy Documents: 0 (2 documents (National Programme and Action Plan on Climate Change) exist, but do not explicitly address EBA (in this terminology)	Number of National Climate Change Authority Policy Documents (Adaptation Strategies) at least 3	EbA strategic priorities-2, IWRMP-3,	HS

Annex V: Map of Mongolia showing Project Areas



Figure 1: Map of Mongolia showing Project sites

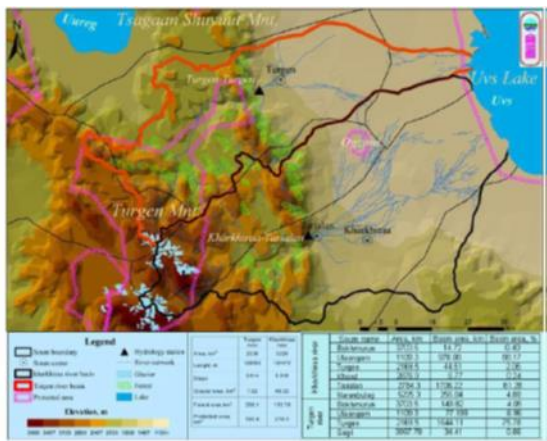


Figure 1: Map of Altai Mountains and GLB

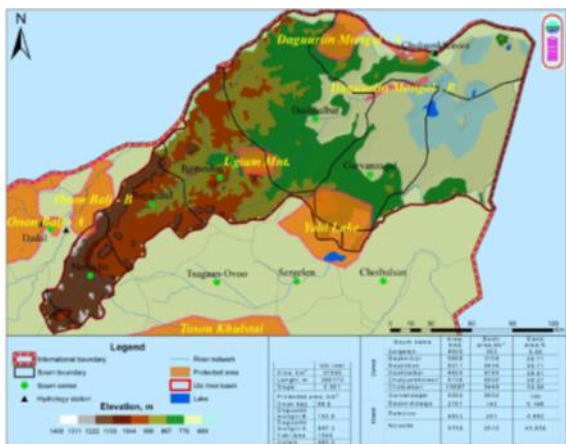


Figure 2. Eastern Steppe

Annex VI: Revised Table of Project Indicators

Objective and Components	Indicator	Baseline				Midterm evaluation	Targets/End of Project	Source of verification	Risks and Assumptions
						% of Target Fulfilled			
Project objective: Maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. Main indicator is Mean annual in-stream flow.	Mean annual in-stream maintained or increased in two project sites ¹⁶	Kharkhiraa River: 1.58 m³/sec Turgen River: 0.78 m³/sec Ulz River: 0.00 m³/sec (at Chuluunkhoroot)				No, situation worse than baseline ¹⁷	Kharkhiraa River: 1.58 m³/sec Turgen River: 0.78 m³/sec Ulz River: 0.01 m³/sec (at Chuluunkhoroot)	Hydrological data reported by existing and new monitoring station	Hydrological reporting stations remain operational (The project will provide support strengthening analysis and monitoring capacity)
	4. 30 day average of minimum discharge in warm period	Kharkhiraa River: 5.15 m³/sec Turgen River: 2.55 m³/sec Ulz River: 5.88 m³/sec (at Chuluunkhoroot)				Situation improved for Ulz			
	5. Long term mean discharge and annual average discharge in selected year.(m3/s)								
	Ground and surface water quality is meeting Mongolian standards in two project sites ¹⁸		Turgen	Kharkhira	Ulz	In all cases overfulfilled	Meeting Mongolian standards	Surface water monitoring reports submitted by national and target site stakeholders	Project reporting and evaluation
		Suspended solids MNS4586:1998/ 35mg/l	16.0	40.0	8.5	Not fulfilled for Turgen and Ulz, overfulfilled for Kharkhira			
		Permanganate COD MNS4586:1998/ 10 mg/l	1.4	7.0	5.28	Overfulfilled in Turgen and Kharkhira, not fulfilled in Ulz			
		NH+4 MNS4586:1998 0.5mg/l	0.42	0.54	0.083	Overfulfilled everywhere			
		Total mineral P MNS4586:1998/0.2 mg/l	0.34	0.45	0.79	Overfulfilled in Turgen and Kharkhira, not fulfilled in Ulz			
		Total Fe MNS4586:1998/ 0.1 mg/l	0.23	0.14	0.0	In all cases overfulfilled			
		Decreased soil compaction, g/cm³	TBD	TBD	TBD				
		Changes of aggregates, % (at the layer 0-10cm, 10-20cm)	TBD	TBD	TBD				
		Water temperature (Celsius)	7.4	5.8	14.4	14/ 12.5 / 19			Impacts of climate change do not outpace project adaptation responses (this will be alleviated by the project's
			As of 2012			As of 2014			

¹⁶ In-stream base flow is a portion of stream flow that comes from the deep subsurface flow and delayed shallow subsurface flow during the summer (un-frozen) period.

¹⁷ The indicators are not feasible, therefore, not fulfilling them does not mean that project did not perform. (compare also recommendations)

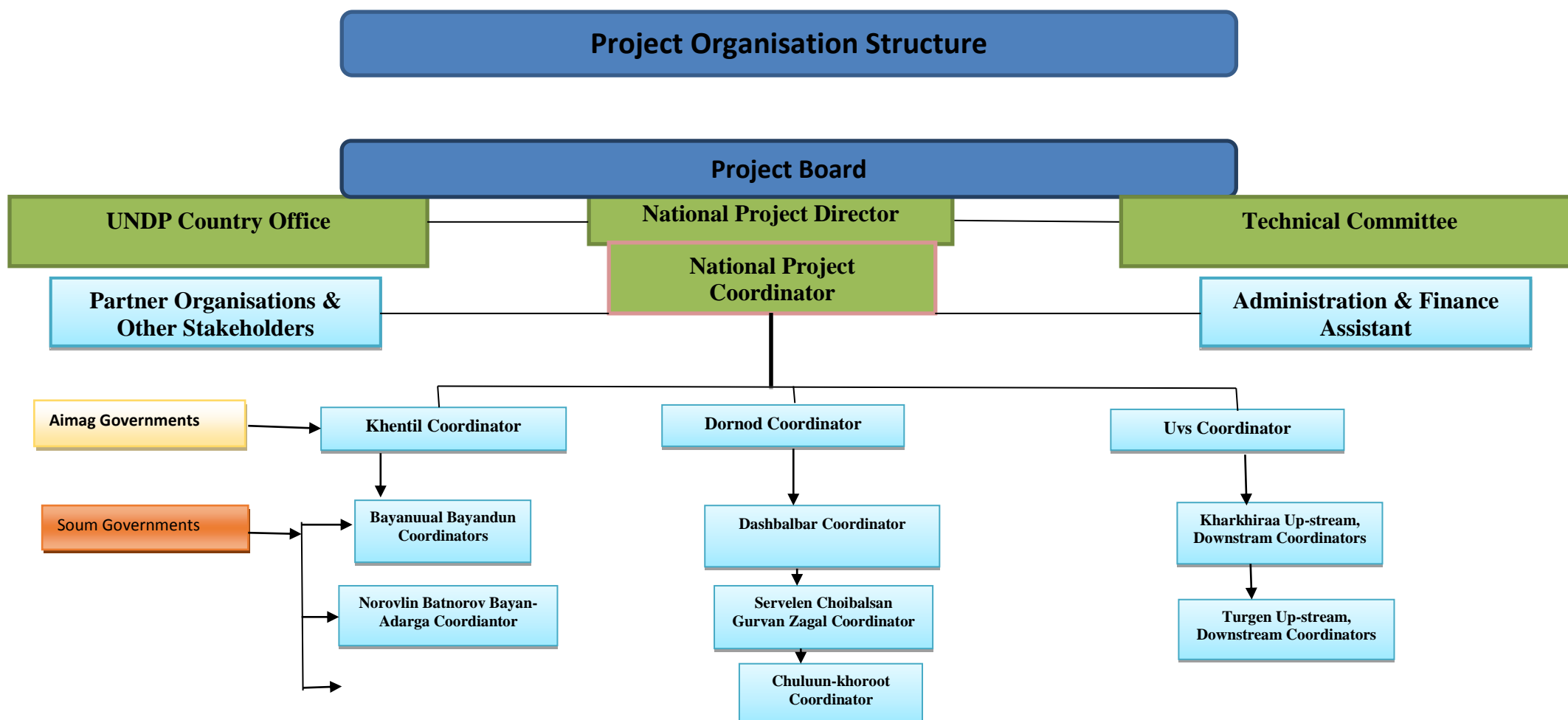
¹⁸ Basing on explanatory note in the Annex, in-stream of Ulz river at Chuluunkhoroot water monitoring post has been trapped in recent years. In project year one, water resource is determined in detail and indicators and targets will be revised.

Objective and Components	Indicator	Baseline	Midterm evaluation	Targets/End of Project	Source of verification	Risks and Assumptions
			% of Target Fulfilled			
Component 1: Landscape Level integrated land use and water resources monitoring and planning system focused upon reduction of ecosystem vulnerability to climate change	5. Number of integrated strategies/management plans for river basins approved and adopted by National and Aimag Governments ¹⁹	Operational integrated strategies/management plans for river basins(or sub-basins): 0	More than 100% , One IWRM plan adopted by all 3 target Aimags (and implementation initiated from the 2015. Seventeen Eba programs developed for each target soum in Kharkhiraa-Turgen and Ulz river basins and endorsed to 17 soum's Parliament.	Operational integrated strategies/management plans for river basins: at least 2	MEGDT and Project reporting and evaluation	Protected area expansion is approved by government structures (this will be alleviated through the participatory planning processes implemented in Component One)
	6. Number of Aimag governments monitoring, assessing, and reporting to MEGDT and relevant agencies (water authority, National Climate Change Coordination Office) on integrated river basin management measures	Number of Aimag Governments implementing integrated strategies/management plans for river basins: 0	More than 100%, Two Ulz RBA and Uvs lake – RBA Three Meteorology offices of Dornod, Uvs and Khentii aimag, Five Governor's Offices of Dornod, Uvs, Khentii, Zavkhan and Khuvsgul aimag	Number of Aimag Governments implementing integrated strategies/management plans for river basins: at least 3	National, provincial and district legislation	
	7. Guidelines for IWRM address climate risks and vulnerability and integrate adaptation measures and EBA approaches	Current guidelines do not address adaptation and EBA issues explicitly	More than 100% , Guidelines for IWRM address climate risks and landscape level Soum Eba Plans are also in support of the implementation of IWRM plans for RBs.	Guidelines for IWRM that address climate change risks	National, provincial and district legislation	
	8. Total hectares included within protected areas system in the two project sites ²⁰	Altai Mountains / GLB: 3,742,000 ha Kharkhiraa,Turgen watershed: 80,000 ha Eastern Steppe: 4,267,600 ha Ulz watershed: 312,000 ha	Fulfilment rate about 7%. Not fulfilled. Good progress has been made in enlarging the network of protected areas: 2014 The protected area has increased almost of 6,000 km2 (600,000 hectares). It's 13% of Ulz, Kharkhiraa-Turgen river basins area.	Altai Mountains / GLB: 3,942,000 ha Kharkhiraa,Turgen watershed: 100,000 ha Eastern Steppe: 4,467,600 ha Ulz watershed: 375,000 ha		

¹⁹ These indicators are uncontrollable however, which does not mean disapproval of the project implementation

²⁰By project close, the National Government and each Aimag within the Altai/GLB and Eastern Steppe landscapes will have adopted the EBA strategic process as formal policy

Annex VII: Organizational Structure of Project



Annex VIII: Field Visit Summary

Field study mission started from 2th of October 2017. On 2th December an Inception Meeting was organised in the PIU office to brief stakeholders on the Terminal Evaluation objective and approaches. On the same day National and International consultants had meetings to discuss the evaluation mission plan. International consultant also had brief meeting with Project Manager, and Program Officer UNDP. Same day in the afternoon, team had meeting with Vice Minister of Ministry of Environment and Tourism, Senior M&E Officer, National focal point of UNFCCC and GCF in Mongolia. On the 3rd October evaluation team had meeting with Professor of University of Pedagogical science, senior researcher of Institute of Geography and Geo-ecology and head of Research and Information department of Press Institute of Mongolia. Team also had meeting with all staffs of PIU. In the afternoon, team had meeting with Senior Officer of Crop Production Policy Implementation Department of Ministry of Agriculture and light Industry and Officer in charge of Ministry of Finance who look after UNDP projects. On the 4th October, team had meeting with Climate Change Freelance consultant, AHEC project coordinator of WWF Mongolia and Director of General and Experimental Biology. In the afternoon team left for Uvs aimag by plane.

Field visit of project sites in Uvs aimag took place from 4th to 7th October 2017 (national consultant didn't join this visit). The detail program of the Uvs aimag visit is tabled in Annex II, Similarly, from 8th to 12th field visit to Khentil and Dornod aimags took place and detail of this visit is provided in table in Annex II.

On 13th October International Consultant (national consultant was absent) had meeting with former NPD, present NPD, Deputy NPD and Senior Researcher of Water Study sector of Institute of Meteorology, hydrology and Environment. In the afternoon, International Consultant had initial finding sharing meeting with UN Resident Coordinator and UNDP Resident Representative, Deputy Resident Representative and Climate Change Program Officer at UNDP CO.

Annex IX: Project Deliverables (including publications)

SN	Name of advocacy material	Year of production
1.	Project leaflet (2012)	2012
2.	Quarterly newsletters- 2012 (III and IV quarter)	
3.	We care for our climate' comic book (2 times of publishing)	
4.	Principles of IWRM planning	2013
5.	Wall poster on climate change	
6.	EBA guidebook	
7.	DVD: Climate change impacts and Ecosystem based adaptation in Mongolia	
8.	Eco cotton bag with project motto (2013)	
9.	Climate change; author Mijiddorj	
10.	Climate change depends on you guidebook; Natsagdorj	
11.	Table calendar (2013)	
12.	Quarterly newsletters- 2013 (3000 pieces for each of III and IV quarter)	
13.	Wall planner (2014)	2014
14.	Wall calendar (2014)	
15.	Wall poster on IWRM	
16.	Wall poster on EBA	
17.	EBA brochure	
18.	Strategic priorities to implement EBA in Altai mountain and Great lakes depression and Mongol Daguur	
19.	DVD; TV broadcasting 'Green Development' on Climate change adaptation	
20.	DVD; Talk show and documentary on EbA	
21.	Guidebook on tree planting techniques (6-book pack; seabuckthorn,larch,bush, elm, willow, aspen tree)	
22.	Monitoring compilation of Hydrology, Meteorology and Environmental center of Dornod aimag	
23.	Eco cotton bag with project motto (2014)	
24.	Solar charger for cell phones	
25.	Energy saving LED light (12 and 40 W; 100 pieces for each)	
26.	Every drop counts' Guidebook and water saving techniques (with pocketbooks)	
27.	Guideline for organizing public awareness activities in environmental sector	

28.	Vulnerability and risk assessment for 2 project target sites	2014
29.	IWRM plan for Uvs lake Tes river basin	
30.	Atlas of IWRM plan for Uvs lake Tes river basin	
31.	Study compilation of IWRM plan for Uvs lake Tes river basin	
32.	IWRM plan for Ulz river basin	
33.	Atlas of IWRM plan for Ulz river basin	
34.	Study compilation of IWRM plan for Ulz river basin	
35.	IWRM plan for Kharkhiraa Turgen sub river basin	
36.	Atlas of IWRM plan for Kharkhiraa Turgen sub river basin	
37.	Study compilation of IWRM plan for Kharkhiraa Turgen sub river basin	
38.	Wall planner (2015)	
39.	Project newsletter (2014-2015)	
40.	Guidebook for Water users group	
41.	Handbook for Water users group	
42.	Farmer's handbook	
43.	Water use record book	
44.	EBA Curriculum for with CD	
45.	CBA report on EBA activities with CD	
46.	CBA guideline on EBA activities	
47.	Poster on Protection of springs by eco-approach	
48.	Soum EBA plans for target soums	
49.	Water partnership' guidebook	
50.	Handbook on strawberry planting techniques	
51.	Wall planner	
52.	Project wall calendar	
53.	Advocacy package with project information and motto: Notebook, ball pen, T-shirt, cap	2015
54.	Flash disk with project motto and outcome picture	
55.	Eco bag 2015	
56.	Edition - Water regulations and policy documents by MEGDT	
57.	Series of guidebooks on using remote sensing and GIS information system in land management	
58.	Guidebook for spring protection by eco friendly approach	

59.	Guidebook for strawberry planting	
60.	“Water Partnership” guidebook	
61.	Report of Economic Valuation of Climate Change Impacts in Ulz and Kharkhiraa/Turgen river basins	
62.	Financial mechanisms of EbA measures	
63.	Design and drawings of water harvesting catchments: small scale traditional and engineered water harvesting catchments	
64.	Table calendar 2016	2016
65.	Wall planner 2016	
66.	Project advocacy package: T-shirt and cap,2016	
67.	Eco bag with wool decoration	
68.	Wool products: Business package	
69.	Wood products: Pen holder	
70.	Flash disk with project motto and outcome picture	
71.	Documentary " Every drop counts" for TV broadcast; series I-IV	2013-2017
72.	Briefings on main outcomes of EBA measures	2012-2017

Annex X: List of Non-expandable Goods transferred to Project's main stakeholders

#	Description	Transfer status	Number of items	Total value,\$
1. Transferred to Uvs lake-Tes RBA and Communities in the West site				
1	Russian Vans	Transferred	5	72963.23
2	Office equipment and supply for IT (Printers, GPS, Desktops computers, UPS, projector, screen tripod, telephone and fax machines, cameras, TV etc.,)	Transferred	19	7795.66
3	Office furniture (table, chair, pedestals, safe, conference table etc.,)	Transferred	21	2220.02
	Assets and equipment purchased for EBA measures and pilot sites			
4	Greenhouse	Transferred	22	46.057
5	Drip irrigation system	Transferred	12	26868
6	Sprinkling irrigation system	Transferred	17	26578
7	Water tank	Transferred	25	25762
8	Small scale briquette equipment	Transferred	1	10900
9	Wool combing equipment	Transferred	2	1553
10	Wool spinner	Transferred	3	2094
11	Solar collector with water tank for heating	Transferred	1	10840
Sub-total			128	187620
2. Transferred to Ulz RBA and Communities in the East				
1	Russian vans	Transferred	6	85625.67
2	Office equipment and supply for IT (Printers, GPS, Desktops computers, UPS, projector, screen tripod telephone and fax machines, cameras, TV etc.,)	Transferred	19	7795.66
3	Office furniture (table, chair, pedestals, safe, conference table etc.,)	Transferred	21	2220.02
	Assets and equipment purchased for EBA measures and pilot sites			
4	Greenhouse	Transferred	17	35589
5	Drip irrigation system	Transferred	8	17912
6	Sprinkling irrigation system	Transferred	12	18888
7	Water tank	Transferred	17	17510
8	Small scale briquette equipment	Transferred	3	32700
9	Wool combing equipment	Transferred	4	3106
10	Wool spinner	Transferred	3	2094
11	Small scale meat packaging and fodder processing equipment	Transferred	1	35315
Sub-total			111	258755.4
3. Transferred to NAMEM (National Agency of Meteorology and Environment Monitoring)				
1	Office equipment (Desktop computers, laser printers, UPS and telephone apparatus etc.,) and office furniture and other property (table, pedestal, chair, tent etc.,)	Transferred	6	2432.85
2	Office furniture (table, chair, pedestals, safe, conference table etc.,)	Transferred	6	686.64
3	Professional meteorological/ hydrological/ glacial equipment and supporting properties			
	Generator Elemax SH3900EX	Transferred	1	1362.01
	Generator Elemax SH6000	Transferred	2	3154.12
	Ice Drill	Transferred	1	7800.21
	Weather Station	Transferred	1	17959.77

	Water level/data logger	Transferred	3	11006.28
	Current meter for water GR-21M	Transferred	3	13207.53
	Thermometer SP-7902B	Transferred	3	1210.68
	Smart water lab LaMotte	Transferred	3	12794.22
	Water level/data logger	Transferred	3	12952.53
	Current meter for water GR-21M	Transferred	3	13346.4
	Thermometer	Transferred	3	1183.02
	Stove	Transferred	1	222.37
	Dwelling	Transferred	1	11101.66
	Tent	Transferred	1	136.84
Sub-total			41	110557.1
Total			280	556932.4

Annex XI: List of References

1. AF Concept and/or Proposal, Project Document, and Log Frame Analysis (LFA)
2. UNDP Environmental and Social Screening results
3. Project Implementation Plan
4. Implementing/Executing partner arrangements
5. List and contact details for project staff, key project stakeholders, including Project Boards, and other partners to be consulted
6. Project sites, highlighting suggested visits
7. Project Inception Report
8. Mid Term Review (MTR) Report
9. Annual Project Performance Reports (PPR)
10. Project budget and financial data
11. Audit reports
12. Project Tracking Tool, at the baseline and at the mid-term
13. UNDP Development Assistance Framework (UNDAF)
14. UNDP Country Programme Document (CPD)
15. UNDP Country Programme Action Plan (CPAP)
16. Oversight mission reports
17. All monitoring reports prepared by the project
18. All publications of the projects (see annex IX)
19. Project operational guidelines, manuals and systems
20. Minutes of the Ecosystem-based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia project Board Meetings and other meetings (i.e. Project Appraisal Committee meetings)

Annex XII: Evaluation Questions

<u>Evaluation Criteria/Questions</u>	<u>Indicators</u>	<u>Sources</u>	<u>Methodology</u>
Relevance: How does the project related to the main objective of the GEF focal area, and to the environment and development priorities at the local, regional and national level?	<ul style="list-style-type: none"> • Project objectives and activities related to objective of AF focal area and priorities at national, local and regional level • Consistency and contribution to AF focal area objectives and to national development strategies • Stakeholder views of project significance and potential impact related to the project objective 	<ul style="list-style-type: none"> • Project documents, report vs AF document • Interview with authorities at different level 	<ul style="list-style-type: none"> • Project report review in the light of AF document • Interviews with relevant personnel
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?	<ul style="list-style-type: none"> • Level of achievement of expected outcomes or objectives to date • Long term changes in management processes, practices and awareness that can be attributable to the project • Management of River basins • Sustainable land management 	<ul style="list-style-type: none"> • Change in the ground situation observed. • Policies reviewed to address issues • Policies effectively implemented • Supply regulated 	<ul style="list-style-type: none"> • Report with forest status information • Report on land management status • Interaction with the policy level people to ground level communities and field staffs. • Reports with information and verification on the ground
Efficiency: Was the project implemented efficiently in-line with international and national norms and standards?	<ul style="list-style-type: none"> • Reasonableness of the costs relative to scale of outputs generated • Efficiencies in project delivery modalities Consistency and contribution to AF focal area objectives and to national development strategies 	<ul style="list-style-type: none"> • Financial statements • Project structure and function • Project document and annual reports 	<ul style="list-style-type: none"> • Analysis of financial statements. • Analysis of project structure and functionalities


	<ul style="list-style-type: none"> • Changes in project circumstances that may have affected the project relevance and effectiveness 	<ul style="list-style-type: none"> • Experience of project staffs and other relevant stakeholders 	<ul style="list-style-type: none"> • Analysis of project circumstances in project document (past and present) • Interaction with relevant stakeholders
Sustainability: To what extent are there financial, institutional, socio-economic, and/or environmental risks to sustaining long-term project results?	<ul style="list-style-type: none"> • Degree to which outputs and outcomes are embedded within the institutional framework (policy, laws, organizations, procedures) • Implementation of measures to assist financial sustainability of project results • Observable changes in attitudes, beliefs and behaviours as a result of the project • Measurable improvements from baseline levels in knowledge and skills of targeted staff/community members etc. 	<ul style="list-style-type: none"> • Project report • Observation in the field • Interview with stakeholders 	<ul style="list-style-type: none"> • Review of project reports. • Observation in the field to see impact on the ground • Interaction with stakeholders
Impacts: Are there indications that the project has contributed to, or enabled progress towards reduced environmental stress and/or improved ecological status?	<ul style="list-style-type: none"> • Sectorial development activities addressing EbA code of conducts. • Rise in awareness and skills improved efficiency of the staffs. • Measurable improvements from baseline levels in knowledge and skills of targeted staff/other stakeholders. • Measurable improvements from baseline levels in the management functions of the responsible organizations that were targeted by the project. • River basins effectively managed. 	<ul style="list-style-type: none"> • Project Reports • Interview with local collectors. • Interview with cooperatives. • Interview with local authority • Observation in the field. 	<ul style="list-style-type: none"> • Review of project reports/documents. • Interaction with local communities, collectors, local authorities. • Field observation.

Annex XIII Evaluation Consultant Agreement Document

ANNEX E: EVALUATION CONSULTANT CODE OF CONDUCT AND AGREEMENT FORM

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation Consultant Agreement Form ¹	
Agreement to abide by the Code of Conduct for Evaluation in the UN System	
Name of Consultant:	<u>Arun Rijal</u>
Name of Consultancy Organization (where relevant):	<u></u>
I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.	
Signed at <u>placename</u>	 Kathmandu, 25 August 2017
Signature:	<u></u>

Annex XIV: Evaluation Criteria

i) Criteria used to evaluate the Project by the Final Evaluation Team

Highly Satisfactory (HS)	Project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as “good practice”.
Satisfactory (S)	Project is expected to achieve most of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings.
Moderately Satisfactory (MS)	Project is expected to achieve most of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environment benefits.
Moderately Unsatisfactory (MU)	Project is expected to achieve some of its major global environmental objectives with major shortcomings or is expected to achieve only some of its major global environmental objectives.
Unsatisfactory (U)	Project is expected not to achieve most of its major global environment objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (U)	The project has failed to achieve, and is not expected to achieve, any of its major global environment objectives with no worthwhile benefits.

ii) Scale used to evaluate the sustainability of the Project

Likely (L)	There are no risks affecting this dimension of sustainability.
Moderately Likely (ML)	There are moderate risks that affect this dimension of sustainability.
Moderately Unlikely (MU)	There are significant risks that affect this dimension of sustainability.
Unlikely (U)	There are severe risks that affect this dimension of sustainability.

iii) Rating scale for outcomes and progress towards “intermediate states”

Outcome Rating	Rating on progress toward Intermediate States
D: The project’s intended outcomes were not delivered	D: No measures taken to move towards intermediate states.
C: The project’s intended outcomes were delivered, but were not designed to feed into a continuing process after project funding	C: The measures designed to move towards intermediate states have started, but have not produced results.
B: The project’s intended outcomes were delivered, and were designed to feed into a continuing process, but with no prior allocation of responsibilities after project funding	B: The measures designed to move towards intermediate states have started and have produced results, which give no indication that they can progress towards the intended long term impact.
A: The project’s intended outcomes were delivered, and were designed to feed into a continuing process, with specific allocation of responsibilities after project funding.	A: The measures designed to move towards intermediate states have started and have produced results, which clearly indicate that they can progress towards the intended long term impact.

NOTE: If the outcomes above scored C or D, there is no need to continue forward to score intermediate stages given that achievement of such is then not possible.

iv) Rating scale for the “overall likelihood of impact achievement”.

Highly Likely	Likely	Moderately Likely	Moderately Unlikely	Unlikely	Highly Unlikely
AA AB BA BB+	BB AC+ BC+	AC BC	AD+ BD+	AD BD C	D

Annex XIV: UNDP-GEF TE Report Audit Trail

To the comments received in April 2016 from the Terminal Evaluation of the project titled,
Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water
Catchments in Mongolia (PIMS 4505)

The following comments were provided in track changes to the draft Terminal Evaluation report; they are referenced by institution ("Author" column) and track change comment number ("#" column):

Author	#/Date	Para No./ comment location	Comment/Feedback on the draft TE report	TE Team's response and actions taken
Ms. Bunchingiv Bazartseren (Bunchin) Program Analyst UNDP Mongolia	22Nov017	Page 47/4.3 Lessons Learned	When you say "best and worst practices" it would be better if you can indicate best ones and worst ones if any	This is general heading and if there is worse practice then that will also be listed in this section and if not then also the heading remains as it is.
Bunchin	22 Nov017	P x/Key Problem Areas	Similarly "Key problem areas" in executive summary sounds alarming, if you could add something to the title to clarify it would be great.	Title changed to "Key problem areas that project aim to address"
Bunchin	22 Nov017	P25 &46/Overall Result & Recommendation	I hope we will be able to also include solar operated pumps and irrigation as well. Please also include items, such as solar rooftop heating solution we have also supported at some point. Project should be able to provide such information. Also recommendation item to use solar energy could be rephrased now.	Solar pump and irrigation and solar heating information added to result and also recommendation rephrased.
Bunchin	22 Nov017	P.Vii/Proejct Description	I understand that you have included facts and figures on CC from the ProDoc in describing the project, which is quite dated. If you can update them by saying by the time of Project development ... and situation now ...	Information was from proDoc and now mentioned "as per the project document" and estimates at the project development time was ..."
Bunchin	22 Nov017	P /Linkage between Project and others Interventions	I also feel that we could include a bit more in section 3.1.7 Linkages between Project and other Interventions within the Sector. Can you work with project team on this? I can think of UNDP ones that can be added, such as BIOFIN, DRR, waste management projects etc.	More information related linkage are added.
Bunchin	22 Nov017	P57/	There is reference to MAAIF (page 57), what does this abbreviation stand for?	It was typo error so corrected.
Bunchin	22Nov017	P46/Recommendation	When you say "Best and worst practices", it would be better if you can indicate best ones and worst ones, if any.	It is general title and includes both types of practices. Since there was no worst one, it didn't mentioned that. Text explains clearly whether it is best or worst ones.
Bunchin	22 Nov017	P.Xii, 26, 43 and 45/Conclusion, Key success of the project, Sustainability and Conclusion.	In more general terms, the section that we have under key successes is very important as you are aware. There you have captured various contributions by the project. Nevertheless, do you think you can quantify that later on in the report, the possible ones at least. Or even better if you articulate "Key achievements" to have Outcome level results, it would be really great.	Major outcomes are mentioned in conclusion, key success and key achievement sections. In key success it both outcome and output level success are explained. Similarly, outcome like change in attitude and

			In this regard, if you can think of a transformational change if you will, it would be great. Having that great rating overall “Highly satisfactory” it would be great to see statements about the project impact on real people’s life and institutions, in other words transformational change. But if you think there is no transformational change, we would like to hear as well. The results that you have tabulated with quantified indicators later on, they are output level ones and It need to capture Outcome level ones that can be quantified.	thinking (transformation) is mentioned in conclusion, key success and also mentioned in the sustainability section.
Bunchin	22Nov2017	P.Xi/Executive summary	Can we cluster the conclusion and present them in bullet points. Perhaps also in conclusion or elsewhere it would also be good to capture how or whether the barriers have been addressed sufficiently through project implementation.	Conclusion in executive summary presented in bullet point. What were the barrier (challenges) and how they were addressed is also explain in conclusion.



Midterm Review of the
“Ecosystem Based Adaptation Approach to Maintaining Water
Security in Critical Water Catchments in Mongolia”
Project by UNDP – PIMS # (4505)

Final Submission February 17th, 2015

Project ID: MON12/301
Project Start: 2012
Project End: 2017

Authors:

Narangarel Yasanjav (National Consultant)
Ingrid Hartmann (International Consultant)

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The consultants would like to thank sincerely UNDP Mongolia and the EbA Project team for the excellent organization of the evaluation and the friendly and fruitful collaboration. In the same way we consultants would like to express thanks to all project coordinators who guided us through the region as well as to governmental officials and technical staff, who provided us with all relevant information profusively and with great hospitality. We especially appreciated the hospitality of those Aimags, who even accomodated us in their school or hospital, in some cases even accompanied by cultural events.

The atmosphere throughout the evaluation was extremely pleasant, therefore, thanks again to everyone who made that possible.

We sincerely hope, that the Midterm Review is useful for the project and wish all the best for the future of the project and all related staff.

Ingrid Hartmann and Narangarel Yansajav

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1. Executive Summary

1.1. Project Information Table

Table 1: Project Information Table

PROJECT/PROGRAMME CATEGORY:	Regular Project
COUNTRY/IES:	Mongolia
TITLE OF PROJECT/PROGRAMME:	Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia (UNDP PIMS 4505)
IMPLEMENTING ENTITY:	United Nations Development Programme
EXECUTING ENTITY/IES:	Ministry of Nature, Environment and Tourism
AMOUNT OF FINANCING REQUESTED:	US\$ 5,500,000 (in U.S Dollars Equivalent)

1.2. Project Description

Integrated adaptation strategies and associated programs are necessary to maintain ecosystem functions and water provisioning services in Mongolia, as the country's fragile ecosystems associated with poor socio-economic conditions are highly vulnerable to climate change. However, the capacities of institutions and rural communities have not been adequately strengthened. Therefore, to implement projects like "Ecosystem based adaptation approach to maintaining water security in critical water catchments in Mongolia" was critical to reduce climate change vulnerability and to solve other associated problems.

The implementation of the project has started in 2012 and will continue till 2017 under the joint funding from Adaptation Fund, Mongolian government and UNDP. The targeted areas are the two main critical and unique landscapes located in west and east parts of the country: Altai Mountains and Great lakes basin, Turgen and Khahiraa river basins and Ulz river basin in Eastern Steppe.

The main objective of the project is ***to maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land water resource management.***

The main strategy of the project is to apply the principles of Ecosystem-based Adaptation to reduce climate change risks, which also involves to strengthen the policy and legal frameworks for increased adaptation, enhanced stakeholder participation as well as capacity building of rural capacities in decision making and trainings in various adaptation skills of communities and governmental entities in two targeted landscapes. The project is being implemented in close cooperation with the national government, research institutes, local governments and community groups

The overall objective of the project lies in maintaining the water provisioning services supplied by mountains and steppe ecosystems by internalizing climate change risks within land and water resource management regimes through an ecosystem based approach. The project aims at alleviating vulnerabilities and dismantling identified barriers by implementing three interconnected components.

1.3. Project Progress Summary per Output

Component I: *Integrated strategies/management plans for target landscapes/river basins developed and under implementation:*

Output 1.1.: Ecological and Socio-economic assessments and base studies as a basis for the development of ecosystem-based adaptation strategies for the target landscapes and for the development of River Basin Management Plans (Kharkhira/Turgen Ulz) have been completed. As a particular highlight, the results of the EbA study had been used as a proposal for gazetting additional Protected Areas, which had been approved already in three Aimags and is now discussed in parliament.

Output 1.2.: Economic ecological valuations have been completed in their first parts on assessing the costs of climate adaptation. A second part on costs and benefits will be completed comparing the landscape level costs and benefits of EbA. The policy relevance of the valuations is ambiguous.

Output 1.3.: Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (Khakhira/Turgen, Ulz) have been mainstreamed into planning operations: Currently EbA strategies have been endorsed by 17 Soum Parliaments. Also IWRM has been 'supported in all River Basin Authorities of the targeted watersheds. The IWRM plan of Uvs lake – Tes river will be endorsed by the Minister of Environment and Green Development in compliance with the Article 4.8 of the "Law on water". In addition, concrete legal, institutional, financial and technical measures were defined for ensuring water security. Additionally, the project managed to expand the protected area network of about 600 000 ha, which led to a substantial recovery of biodiversity there and improvement of the hydrological conditions in the area demonstrated by a return of indicator species.

Component II: *Implementing landscape level adaptation techniques to maintain Ecosystem Integrity and Water Security under Conditions of Climate Change*

Output 2.1.: Capacities of rural communities for monitoring natural resources and climate change impacts and for adaptive management in two watersheds strengthened by enabling monitoring. In three communities monitoring stations were established to measure water discharge. In particular, schools were taught in biological water monitoring based on indicator species, and Aimag Laboratories received support to monitor 20 – 30 chemical elements. As an important achievement of project support, Dornood Aimag laboratory was officially certified by the government. The results of chemical and biological monitoring demonstrated that water sources were mainly clean, except of occasional faecal pollution through livestock. Additionally the project provided a glacier monitoring station in Altai Mountain.

Output 2.2. Suite of physical techniques to improve ecosystem resilience established in the two critical sites: This encompassed the rehabilitation of springs and engineered wells and the establishment of water basins. Out of the total goal of rehabilitation of 70 springs, currently 12 have been rehabilitated and fenced. Favourable conditions of availing 22,000 hectares as habitat for the white-naped crane and antelopes from farming and economic activities have been established, and 16,000 hectares pastureland which had been abandoned due to water scarcity had been rehabilitated. Water supply issues of 15 ha of agricultural land had been resolved, and innovative water supply systems had been equipped with central power systems with renewable energy. Furthermore water basins have been put in place through modern technologies and two through revival of traditional technologies. Strategically the project has a particular merit in enhancing ecosystem resilience through applying the landscape approach by balancing pasture-water-livestock ratios as the newly established or re-established water sources induced movements from overgrazed areas, where carrying capacity exceeded, to pastures which had still rich resources. Additionally the project started to introduce briquetting to safe fuel wood and manure resources, a component which will be put into focus in particular in 2015.

Output 2.3. Regulatory and financial mechanisms for supporting climate change resilient livelihoods strategies: The project supported certain livelihood strategies in particular women's cooperatives, which benefited from felt making and greenhouse gardening trainings, the latter ones earning about 20,000 – 30,000 Tugrig per member. Cooperatives were also trained in financial management.

Component III: *Strengthening capacities/Institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies.*

Output 3.1: Ecosystem-based adaptation approaches/integrated river basin management mainstreamed in national resource use planning and implementation mechanisms in sector policies: Concepts such as establishment of River Basin Administration (RBA) and RBA Management Plans were

introduced into the Law on Water and Law on Water Pollution demonstrating that the project indeed management to mainstream ecosystem-based adaptation approaches into planning mechanisms of sector policies. The mainstreaming of EbA into laws stabilizes the concept of EbA within the Mongolian legislation and is an important achievement of the project.

Output 3.2.: Institutional structure for river basin management integrating climate change risks (Administration and Council) established and in operation in the target areas as model for replication: The project has supported RBAs in mainstreaming climate risks and supported them through the introduction of IWRM and user groups. The project has also enhanced the participation of civil society in Water Management through involving River Basin Councils into monitoring of RBAs.

Output 3.3.: Best practices are identified and a program for up-scaling best practices developed and implemented: Almost all practices and strategies of the project are worth to be up-scaled and disseminated. The project has already worked out a dissemination strategy through print media and radio in collaboration with a Press Agency.

Table 2: MTR Ratings & Achievements

Measure	MTR Rating	Achievement Description
Project Strategy	N/A	The project strategy takes fully into account the barriers to EbA implementation. It is one of the few innovative ones which take a rigorous ecosystem approach to climate risks and is at the same time in full coherence with the climate change adaptation strategy of the country.
Progress Towards Results	Objective Achievement Rating: (6)	The project has not formulated a benchmark for achievements during the time of the MTR, but the goal of maintaining water provisioning services within the ecosystems of the targeted areas by internalizing climate change risks has been fulfilled or even highly over-fulfilled, if 50% is considered as an average benchmark. Why the rating is not a full 6 is because of minor shortcomings in the economic ecological evaluation and some minor problems within the livelihoods components
	Outcome 1 Achievement Rating: (5)	Integrated strategies/management plans for target landscapes and river basins have been developed and are under implementation already in 3 Aimags and 17 Soums. Highlights of achievements are the endorsements of 3 PA proposals on Aimag levels. Why the Outcome is not rated full 6 points is because of the ambiguous quality of the ecological economic assessment, which, however, could not be fully controlled by the PIU.
	Outcome 2 Achievement Rating: (6)	The project applies a multitude of adapted physical techniques which enhance climate resilience on community level. The highlight of the component is its full integration into the ecosystem approach, by using the location of water infrastructure as an incentive to move herders away from overgrazed area, in this way achieving a better water-pasture-livestock balance. Another highlight has been the enabling of communities to monitor physical, chemical and biological water parameters
	Outcome 3 Achievement Rating: (6)	The project has been instrumental and successful in integrating climate risk issues into RBAs, it has supported IWRM as a participatory approach in water management, and civil society monitoring of RBAs through RBCs.
Project Implementation & Adaptive Management	Achievement Rating (6)	The PIU has an excellent understanding of the ecosystem approach taken and a full overview over the measures required to implement them on the ground. The communication with all stakeholders is excellent, all planning has been immediate followed by implementation, and even external obstacles to implementation have been immediately and successfully addressed.
Sustainability	Sustainability rate (4 out of 4)	Ecological, economic, social and political sustainability is high, eventual risks have already been prevented through the project strategy or successfully mitigated.

1.4. Conclusions

After careful comparison of strengths and weaknesses of the project, clearly the strengths are dominant. In conclusion, the project strategy taken is well designed to address current climate change problems. Taking an ecosystem approach is one of the most appropriate strategies to enhance climate resilience and the interventions undertaken address the ecological conditions of the project areas in a proper way, and implementation of the ecosystem approach is done in a rigorous, effective and efficient way. Major successes can already be seen in the improved natural capital base of the project, mainly in rehabilitated creeks, rangelands and protected areas, where already indicator species, which had left the area, had returned and base flows have increased. Within the economic capital categories, improved incomes and livelihoods have been established mainly through enhanced agricultural productivity and wool processing units. However, the project's monitoring and evaluation frameworks do not support easy and efficient reporting, therefore might be revised.

Table 3: Summary of Recommendations

Rec #	Recommendation	Entity Responsible	Scope
0	The project is strategically fully in line with its major objective and implemented with high effectiveness, therefore should continue in this direction with some amendments in the project strategy	UNDP	Full project level
Corrective Actions of Project Design			
1	<p>Strengthening of impact and outcome level indicator monitoring and revising at least one output indicator:</p> <p>- For overall Project Goal use data for “<i>stream base flows</i>” and “<i>Soil organic C</i>” and <u>data from glacier monitoring</u> for tracking not as impact indicators. Delete “<i>soil colour</i>” and “<i>ph</i>” value as indicators. If institutions have access to remote sensing data for soil moisture, this could be as an impact indicator with a target of not going below a historical average. Other soil data cannot be measured on watershed scales.</p> <p>Use either “<i>Ratio of extraction of surface water resources : ground water resources for extraction higher than 20:80</i>” as an indicator on watershed level and discuss with appropriate institutions about a feasible target. Or use “<i>number of surface water resources and their productivity/capacity</i>” as an indicator for water related ecosystem services.</p> <p>Use “<i>ecosystem connectivity</i>” as reported to the CBD, measured by linkages between ecosystems as another EbA related indicator on watershed level.</p> <p>Replace target for “<i>5% improvement</i>” of chemical substances in water sources by “<i>not higher than Mongolian Standard values</i>” and take action only when contamination rates are converging against this value.</p> <p>Replace “<i>reduced poverty rate</i>” by “<i>enhanced incomes</i>” on watershed level.</p> <p>On Aimag level or sub-watershed level it is also possible to use these indicators as outcome indicators.</p> <p>Another appropriate outcome indicator/target for <u>Component 2</u> is: “<i>improved livestock-pasture-</i></p>	PIU in collaboration with UNDP	Logframe

	<p><i>water resources balance</i>” measured by <u>livestock numbers: water and pasture resources within sub-watersheds, compared to carrying capacities</u> measured within the project.</p> <p>Add an <u>Output indicator</u> which measures energy related activities to Component 2.</p> <p>It would furthermore be nice to distinguish between a land and a water related subcomponent or respective output indicators in Component 2.</p> <p>One might furthermore think about the contextual cohesion of the outputs in Component 3 and might which to shift one or another output to another component, as considered in Annex I.</p> <p>The project should in future be more consistent with language using “Outputs” and “Outcomes” etc.</p>		
2	Report about the use of co-finance resources in more detail within the second phase of the project.	PIU in collaboration with UNDP	M&E Framework
3	Introduce Benchmarks and Training Plan in addition to Work Plans	PIU in Collaboration with UNDP	Work Plan
Immediate Benefits			
4	Establish a vulnerability profile of women, especially with respect to cold weather conditions and discrimination in income generation options. With respect to coldness, water monitoring posts should be provided with small dwellings like the one which the post for glacier monitoring has already received. If possible provide in-door toilets in schools	PIU	Single Activities to protect project attached staff
5	Improve ecological economic valuation scope	PIU in collaboration with UNDP	Output-related intervention
6	Link spring protection with provision of water basins for livestock	PIU	Set of Combined Activities
7	Reduce evapotranspiration in water harvesting schemes	PIU	Single Activity
8	Pilote water regeneration schemes of higher density	PIU	Single Activity
Addressing and Re-Enforcing Benefits			
9	Address snow hazards	PIU	Single Activity
10	Integration of fire management into EbA management	PIU	Strategic Intervention
11	Introduce Sustainable Intensification of pastures	PIU	Single Activity
12	Taka a mosaic landscapes approach	UNDP and PIU	Strategic Approach on Project Level
13	Strengthening wool / sheep / pasture value chain	PIU	Strategic Approach on Project level
14	Streamlining poverty reduction targets with environmental targets	UNDP and PIU	Strategic Approach on Project level
15	Introduce collection of water fees for maintenance of structures	PIU	Single Activity
16	Enhance research and implementation of traditional water harvesting	PIU	Single Activity
17	Paying more attention to snow melt and green water flows	PIU	Single Activity

18	Introduce EbA related activities into Small Grant proposals	PIU	Strategic Intervention on Output level
19	Strengthening Inter-Sectoral Collaboration among Ministries	UNDP	Strategic Intervention
20	Promoting environmental journalism on local levels	PIU	Single Activity
21	Conduct exchange visits of beneficiaries among different Aimags and target river basins	PIU	Single Activities
22	Add traditional ecological knowledge into environmental education of eco-schools	PIU	Single Activity

2. Introduction of the Objective of the Evaluation and Background Information of the Project

2.1. Purpose of the MTR and Objectives

The objective of the evaluation is to conduct a Midterm Review for the project titled “Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia” MON/12/301. The consultancy addresses the standard goals of a Midterm Review according to the “Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Mid-Term Reviews”. The Project Goal is the monitoring of implementation and adaptive management to improve outcomes; to follow up, if the project is meeting its objectives and is likely to fulfil all expected outcomes at the end of the project, the early identification of risks to sustainability, accompanied by supportive recommendations.

2.2. Scope and Methodology

The geographical scope of the evaluation are the two project sites within the Kharkhiraa, Turgen river sub-basin in Altai Mountains and Great Lakes Depression (Altai/GLD) eco region and the Ulz river basin in the Dornood steppe and Mongol Daurian eco-region.



Figure 1: Project Locations within Mongolia

The main objective of the project is to maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. Geographically, the project covers i) the Altai Mountains and Great Lakes Basin Eco-region; ii) the Eastern Steppe Eco-region; focusing on the Turgen/Kharkhiraa Sub River Basins – (Turgen, Ulaangom, Sagil, Bukhmurun, Khovd, Tarialan, Naranbulag soums of Uvs Aimag); and the Ulz River Basin – (Chuluunkhoroot, Dashbalbar, Bayandun, Bayan-Uul, Gruvanzagal, Choibalsan, Sergelen soums of Dornod aimag; Bayan-Adarga, Batnorov, Norovlin soums of Khentii aimag).

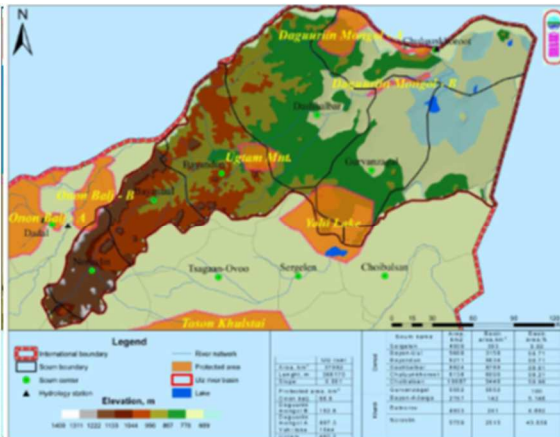
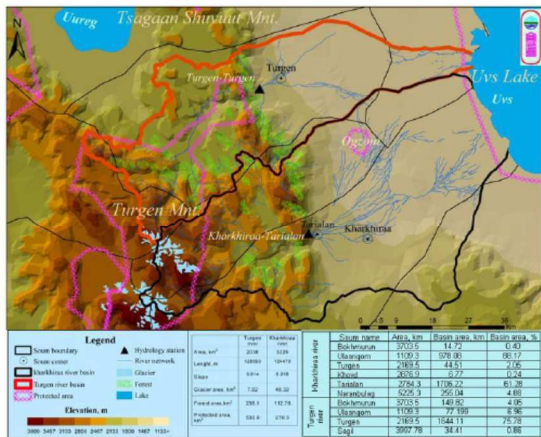


Figure 2: Altai Mountains and GLB

Figure 3: Eastern Steppe

Methodologically in the preparatory phase the provided literature (see Annex IV) was reviewed, the field visits were based on focused group interviews, individual expert interviews and field observation. A special participatory method – the H-Method – was used for participatory rating of project achievements in the three components (see Annex III).

The methodological approach to assess project resilience as suggested in the inception report had been the CoBRA Method and the Sustainable Livelihoods Framework (Compare Annex III). Later on the EbA framework by UNEP was also used for the system analysis in Chapter 4, while the project matrix suggested in the inception report was replaced by the one of the UNDP template for the Conduction of Mid- Term Reports.

2.3. Structure of the Report

The structure of the report follows the Template B of the TOR. In Chapter 3 the project description including the background context is given; in Chapter 4 the key findings are outlined, starting with a project design and logframe analysis, followed by an outcome analysis with a focus on the detailed achievements of the project. The project strategy is given particular attention, followed by implementation issues, sustainability, reporting and communication. At the end conclusions and recommendations are listed.

3. Project Description and Background

3.1. Development Context

The project sites are under economic conditions, where the collapse of the Soviet regime has not only led to a breakdown of the Mongolian economy, but also to a shift of the intensive agricultural system towards a more extensive herding system. This is in particular the case for the Eastern Steppe, where wide areas have been covered by irrigation agriculture mainly for wheat, and while still some broken equipment is left, this shift has been ecologically friendlier, and also most Soums recovered economically to a certain degree.

However, still the environment is under the threat of climate change, and scenarios project the following changes for the nearer future:

- Higher precipitation in coming years, but with irregular cycling.
- Higher temperatures, leading to higher evapotranspiration which is partly or fully offsetting the impacts of higher precipitation on water resources, leading to the drying up of upstream creeks, which normally feed into Ulz river, which is therefore also drying up, particularly in the middle course.
- For the nearer future an increase of surface water was projected for the northern and western mountains in Mongolia, due to reduction of permafrost areas and glacier melting.

Climate projections lead to the conclusion, that under climatic change until 2030 in particular the sectors husbandry, wildlife, mining and water will be at high risk in the eastern region, whereas the water, forest, household, livelihood and agriculture sector will be under higher risk in the Western Eco-Region.

Climate impacts have furthermore been exacerbated by anthropogenic influences, which have destroyed springs in upstream catchments.

The lack of water causes a general imbalance of livestock-pasture-water ratios, leading to irregular movements of pastoralists to upstream areas, which causes further depletion of water resources there and a degradation of pastures.

Besides climate change, there are other sometimes climate related, sometimes anthropogenic factors, like unintended fires, declining carrying capacities of pastures accompanied by changes of herd structure and locations of water points, illegal logging and poaching, unsustainable agriculture and water pollution, which aggravate the implementation of ecosystem-based adaptation.

3.2. Problems that the Project Sought to Address: Threats and Barriers Targeted

The project design is guided by the notion that societal adaptation is best achieved by ensuring the continued provision of ecosystem services and establishing the capacities required to identify and deal with new arising challenges. Within this endeavour, it has to address the following barriers:

Barrier I: Absence of landscape level framework for internalising ecosystem resilience to climate change in coherent land use and water resources monitoring and planning system.

- There is no technical experience with interventions and solutions for ecosystem based management.
- There is certain success in habitat restoration, protected areas management, reduced forest harvest and livestock management, but these are isolated efforts. Therefore, what is needed is an ecosystem or landscape level approach to reduce vulnerability to climate change

Barrier II: Inadequate demonstrated experiences in ecosystem based adaptation approaches at the landscape level

- Integrated strategies/management plans for target landscapes/river basins developed and under implementation, but decision making framework necessary for climate change resilience to address degradation of ecosystem services for rural economy.
- Major drivers such as grazing, fuel-wood consumption and water appropriation are not properly captured through an informed management structure.

Barrier III: Weak institutional capacity and policy framework to promote ecosystem based adaptation approach

- New institutions like National Climate Change Committee, the National Climate Change Authority and various River Basin Councils have been established, but are still not appropriately equipped for monitoring and have insufficient coordination and planning capacities to maintain ecosystem services under a changing climate.
- Existing and pending legislation, such as the draft pastureland management act, do not fully incorporate the need to maintain ecosystem services. Fiscal incentives promote rather exploitation of resources than their conservation and maintenance.

To address these barriers, the project undertakes an ecosystem approach with the expectation, that sustainable incomes from agriculture and pastoralism can only be achieved, if they are integrated into a sound environment which is able to supply all necessary ecosystem services required for the well-being of people. The project strategy addresses therefore technical, social and political issues through a multi-stakeholder approach. It demonstrates the practical dimensions of EbA implementation through a broad mix of interventions mainly related to pastoralism and water management. This strategy is an important part of the national climate adaptation strategy of the country, and the implementation areas have been selected in close coordination with Line Ministries as the ones, which have not yet been covered by other projects and are facing highest threats to climate change.

The overall objective of the project lies in maintaining the water provisioning services supplied by mountains and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. The project aims at alleviating vulnerabilities and dismantling identified barriers by implementing three interconnected components:

Component I: Integrated strategies/management plans for target landscapes/river basins developed and under implementation;

Component II: Implementing landscape level adaptation techniques to maintain ecosystem integrity and water security under conditions of climate change.

Component III: Strengthening capacities/Institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies

3.3. Project Design Principles

In its strategy, the project applies the principles of Ecosystem-based adaptation (EbA) to increase climate change resilience at landscape level by and for maintaining or enhancing basic ecosystem services through collective action among governments, communities, conservation and development organizations and other stakeholders. The project strategy is one of the few and innovative ones, which rigorously pursues an ecosystem-based approach, and which simultaneously even improves human well-being.

3.4. Project Implementation Arrangements

UNDP is the **Multilateral Implementing Agency (MIE)** for the project. The project is implemented following UNDP's National Execution Modality (NEX). The designated Implementing Partner of the project will be the Ministry of Environment, Green Development and Tourism (MEGDT), which is responsible for implementing UNFCCC and water resource management and holds the responsibility of the senior supplier and timely delivery of inputs and outputs and for coordination of all other responsible parties, including other line ministries, relevant agencies and local government authorities.

The **Project Board (PB)** has 11 members composed of designated senior-level representatives of MEGDT, Ministry of Food and Agriculture, UNDP and local Governor's offices.

The PB is responsible for making management decisions for the project and plays a critical role in quality assuring through monitoring and evaluation of the project.

Project Assurance – UNDP Mongolia supports project implementation by assisting monitoring, project budgets and expenditures, recruiting and contracting project personnel and consultant services, subcontracting and procuring equipment upon request of the Implementing partner (MEGDT). UNDP Mongolia will also monitor the project implementation and achievement of project outcomes/outputs and ensure the efficient use of donor funds through an assigned programme officer in the Country office in Ulaanbaatar.

National Project Coordinator (NPC) – The prime responsibility of the National Project Coordinator is to ensure that the project produces results specified in the project document to the required standard of quality and within the specified constraints of time and cost.

Project Support – The Project Implementation Unit (PIU) is a core technical team including 3 technical officers and Project Administrative and Financial Officer, a Secretary and Translator and a Driver who are supporting the NPC to execute the project activities including day-to-day operations, financial management and reporting. At the target demonstration sites, 9 local coordinators have been recruited.

3.5 Project Timing and Milestones

Table 4 lists the most important milestones of the project.

Table 4: Most important Milestones of the Project

Milestones	Dates
Submission of Concept to AF Board	September 2010
Approval of the Concept by the AF Board	November
Development of a Full Project Proposal	January – March 2011
Submission to AF of a Full Project Proposal	April 2011

Approval of Full Project Proposal	June 2011
Start of Project/Programme Implementation	November 2011
Midterm-Review	December 2014 – February 2015
Terminal Evaluation	June 2017
Project Close	October 2017

3.6. Main Stakeholders

Table 5: Major stakeholders of the Project

Stakeholder	Anticipated roles
IFAD, World Bank, Swiss Agency for Development and Cooperation, The Nature Conservancy, Wildlife Conservation Society, World Wildlife Fund	Technical inputs into the project formulation and implementation, Ensuring complementarities and synergies with activities of other on-going and future projects
Stakeholder	Anticipated roles
Government entities	
Ministry of Nature, Environment and Tourism	Overall conservation of nature and implementing UNFCCC and UNCCD. It is Project implementing partner and its implementing agencies , Water Agency, Forest Agency, Specially Protected Area Administration will be main counterparts
Ministry of Food, Agriculture and Light Industry	Main counterpart for pastureland management issues
Ministry of Mineral Resources and Energy	Main counterpart for mining and energy issues
Local Government (aimags and soums in the two target eco-regional landscapes)	Provides implementation support at the local level and ensures mainstreaming of local level policies
Administration for Land Affairs, Construction, Geodesy and Cartography	Main partner in land use planning and management.
State Specialized Inspection Agency	Advising on and supporting enforceability aspects of legislations
River Basin Councils	Partner in ensuring water management and conservation activities are in line with watershed/basin management plans
Academia	
Mongolian Academy of Science and research institutes	Institutes of Geo-ecology, Biology and Institute of Meteorology and Hydrology are partners in baseline and feasibility studies and continued monitoring of indicators
Communities and Private sector	
Communities	Project implementers and direct beneficiaries in the target watersheds.
National Meteorology Association	Potential partner in studies and developing land use and watershed management planning at a landscape level
National media	Information dissemination
Donors and NGOs	

4. Findings

4.1. Project Strategy

4.1.1. Project Design

The ProDoc has profoundly analyzed the basic problems of the initial lack of capacities to create an operational model for ecosystem level monitoring, assessment and planning that integrates climate change vulnerability. Under the suggested project strategy the appropriate interventions to address these underlying problems as well as existing barriers have been taken. Assumptions made by the project were fully realistic, and risks were also assessed in a feasible way. Risks were also prevented by double-fixing project results on technical, political and institutional levels and on local, regional and national scales. The climate resilience strategy is fully relevant to the challenges of climate risks, and the general threats of reduced water resources and pasture productivity on local levels and resulting threats to livelihoods.

The activities most relevant to address climate change related problems are listed in Table 6.

Table 6: Relevance of Activities to Address Climate Change Problems

Activity	Climate Change Problem addressed
Grazing management	Pasture decline of 8 – 37%
IWRM, support to RBA and RBCs, water user associations	Inadequate water resource regulation and management.
Studies on climate change Awareness raising on climate change	Climate change vulnerability and lack of climate awareness
Glacier monitoring station	Glacier loss and lack of monitoring
BioSan monitoring, rehabilitation and augmentation of wildlife habitats, application of natural reserves around wetlands	Low and reducing space for wildlife habitats

The project is an important arm of the implementation of the Mongolian Climate Change Adaptation Policy, which guarantees its full country ownership. This is strengthened through the project strategy itself, by making EbA and IWRM approaches part of regional and national laws and regulations. The project was put into place in a fully participatory manner, and the project has helped even to establish new participatory institutions, such as water and pasture user groups, IWRM, RBCs etc.

4.1.2. Logframe Analysis

The original logframe in the ProDoc aligns sufficiently project result areas with the barriers to climate change adaptation and defines coherently outcomes and outputs. Nevertheless, in the inception meeting, shortcomings of the logframe in the ProDoc have been raised, and certain changes have been conducted.

The changes are:

- Abandoning of the Outcome levels of the ProDoc and considering the components of the ProDoc logframe as outcomes in the revised logframe.
- Expansion of indicators for the overall project purpose from 2 categories (chemical elements in water and stream flows) to 4 – soil indicators and glacier monitoring.
- Adding 1 indicator to Component 1 and 6 indicators to Component 2, while outputs have been maintained.

a) Impact and Outcome Indicators

Some indicators and targets are not specific enough to separate influence of project impacts from other factors and can also not be measured with the necessary accuracy the measurement of the impact would require: As for instance:

“Mean annual in-stream summer 30 day base-flow maintained (not decreased) at project site.”

The indicator is not specific, as the impact of the influence on stream base flow by project activities cannot be sufficiently separated from water related impacts outside the influence area of the project,

and is furthermore object to the dynamics of precipitation and evaporation, which makes it impossible to measure project impacts with the necessary accuracy. Therefore, the indicator does not fulfil the two first requirements of being SMART (specific, measurable).

One might instead rather use an indicator like “*Ratio of extraction of surface water resources : ground water resources for extraction higher than 20:80*” as an indicator on watershed level, since this is also one of the overall targets of the national water policies and could be measured on watershed level as an impact indicator, and on project or sub-watershed level as an outcome indicator. Feasible targets could be discussed with the responsible hydrological institutions. One could also use the “*number of surface water resources and their productivity/capacity*” as an indicator for water related ecosystem services on watershed and sub-water shed levels as impact and/or outcome indicators. For the impact of land related activities one could also use the indicator “*ecosystem connectivity*” as reported to the CBD, measured by linkages between ecosystems as another EbA related indicator on watershed and sub-watershed level.

What has been said on stream-flows, applies also for soil indicators, which are not reactive enough to project impacts to be used as measures and also not specific enough. “*C or organic matter*” is not sensitive enough to smaller environmental impacts, also measurements are generally not sensitive enough to capture very small changes, while “*pH*” can react on other than the project impacts, “*colour*” is very stable and can only be used to assess changes in the scales of decades or centuries. The indicators therefore do not fulfil the SMART criteria of either being specific or measurable. In general, soil indicators are very difficult to measure on watershed level and with feasible efforts, unless soil remote sensing data are available.

“Poverty Rates”

Poverty reduction is in the same way an unspecific indicator as streamflows, as the impacts of the project might not be high enough to influence the poverty rate in measurable ways. One might therefore rather use accumulated incomes on watershed levels compared to baselines (either collected after MTR or based on available statistical data).

b) Targets

“*Ground and surface water quality improved or maintained at two project sites.*” with the target of 5% improvement is normally not in line with international procedures, which rather tailor targets towards the water quality standards and suggest actions only, if standards or thresholds are exceeded. If the target would be maintained, it would require action, where no action is needed, and where success can only be achieved with high efforts, since some elements are very difficult to remove from water resources, particular if they originate from the paternal materials. Therefore, these efforts should not be made, if the content of these elements do not present any health risks, which is the case, as long as they remain below Mongolian or International Standard Values, which is the case for most of the parameters monitored in the project

Another appropriate outcome indicator/target for Component 2 would be: “*improved livestock-pasture-water resources balance*” measured by livestock numbers: water and pasture resources within sub-watersheds, compared to carrying capacities measured within the project, as this is a more overarching indicator and target than the current ones on land and water related activities. .

c) Output Indicators

It seems to be necessary to add one output indicator to capture the energy related activities of the project, as highlighted in Section 4.2.2.b.

For further clarity it would also be nice to distinguish between a land and a water related subcomponent or respective output indicators in Component 2, however, it would not affect progress process monitoring if this would not be done. As for instance, one might furthermore think about the contextual cohesion of Outputs in Component 3, which subsume mainstreaming of climate risk related activities into national frameworks, capacity building of governments and outreach activities under one Component, and if one should not better one or another output to another component, as considered in Annex I. One might also consider to separate Output Indicators in Component 2 into land and water related indicators and consider other suggestions in Annex I. Another question is, how cross-cutting issues like trainings are

to be monitored in the best way, – if integrated under each component, or monitored extra through a an additional training plan.

d) ***Language***

In several cases the project uses the terms “Results”, “Outputs” and “Outcomes” in a synonymous way (compare Annex I) and should try to use language more consistently in future.

4.2. Progress Towards Results

4.2.1. Component 1

OUTCOME 1: INTEGRATED STRATEGIES/MANAGEMENT PLANS FOR TARGET LANDSCAPES/RIVER BASINS DEVELOPED AND UNDER IMPLEMENTATION

Output 1.1.: Ecological and Socio-economic Assessments (Baseline studies) as a basis for the development of Ecosystem-based Adaptation strategies for the target landscapes and for the development of River Basin Management Plans (Kharkhira/Turgen Ulz)

Output 1.2.: Economic Valuations completed comparing the landscape level costs and benefits of EbA.

Output 1.3.: Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (Khakhira/Turgen, Ulz) completed and operational.

a) Assessments

The project has assigned various assessments to lay the ground for its EbA strategy. According to the perception of stakeholders those assessments have been of high relevance and quality. Besides laying the ground for the necessary project interventions, the major highlight and achievement of some of the assessments – the ecological baseline study on Ulz river basin – were used for application for gazetting of additional Natural Protected Areas¹ mentioned above in three places:

- Khukh lake (95,403.9 ha),
- Upper stream of Tes river, Kharkhiraa and Turgen sub river basin (41,771 ha),
- Upper stream of Ulz river (102,563.32 ha).

These applications have been already approved by three Aimag Parliaments during the time of the Mid-Term review and are currently waiting for approval on ministry level.

Another highlight of the project is the “Permafrost study of Mongolia” which the project has initiated in cooperation with MEGD (to be completed within 16 months) to develop a science-based “Permafrost distribution map” scaled 1:1000 000.

All assessments and studies are of high technical and scientific quality and address either knowledge gaps which are necessary to be filled for the successful implementation of the EbA strategies or the immediate needs of stakeholders. The design of the studies is very clear and appealing due to the collaboration of the project with a press institute, which designs and prints the studies.

b) Ecological Economic Evaluation

The project had assigned an ecological economic assessment on the impacts of climate change on the two critical river basins in Mongolia. Within the inception phase a major discussion was directed to the better inclusion of local stakeholders needs. UNDP was also expecting more policy relevant information from the assessment. The evaluation team doubts that this has been fulfilled up to now. Until now, the available report analyse the costs of climate change under different scenarios on sensitive subsectors. As for instance, the most recent study assesses impacts on herders' livelihoods, but does not assess alternative options of climate change adaptation policies. The study had almost been finalized during the time of the MTR, but without satisfying recommendations, which one consultant, who was additionally hired, added during the time of the MTR.

UNDP itself commented that the economic ecological assessment should support decision makers how and where to make investments within the integrated adaptation framework and actions for climate resilience livelihoods. Also the scope of the planned assessment for the second period (as reported) to compare costs and benefits of agriculture under different irrigation systems is too narrow. It should include for instance the economic impacts of interventions into hydrological flows, changes of nutrient flows, interventions into natural habitats and the assessments of habitat risks, conversion of land use systems with regard to pastures, cropland and aquaculture, economic impacts of steppe fires and the

¹ Not strictly protected areas

value of certain natural habitats for ecotourism, the economic impact on potential carbon sequestration and the ecological economic impacts of changes of land use systems through irrigation.

c) Adaptation Strategies

The strategy pursued by the project to mainstream adaptation strategies into governmental planning has been instrumental in creating high ownership and sustainability of climate change adaptation and EbA policies and was implemented by the project with great success. Seventeen EbA programs were developed providing plans for adaptation measures on the landscape level for each target Soum in Kharkhiraa-Turgen and Ulz river basins and endorsed by 17 Soum's Parliament.

The project was also instrumental in mainstreaming IWRM plans into all key sectors and institutions both public and private and involving water users at all levels, so that one Integrated Water Resource Management (IWRM) plan was officially adopted by all three target Aimags. The IWRM plan of Uvs lake – Tes river will be endorsed by the Minister of Environment and Green Development (MEGD) in compliance with the Article 4.8 of the “Law on Water”. Furthermore, concrete legal, institutional, financial and technical measures were defined for ensuring water security.

Additionally, the project managed to expand the protected area network of about 600 000 ha, which lead to a substantial recovery of biodiversity there and improvement of the hydrological conditions in the area.

4.2.2. Component II

Component II: Implementing landscape level adaptation techniques to maintain Ecosystem Integrity and Water Security under Conditions of Climate Change

Output 2.1. Capacities of rural communities for monitoring natural resources and climate change impacts and for adaptive management in two watersheds strengthened

Output 2.2. Suite of physical techniques to improve ecosystem resilience established in two critical watersheds.

Output 2.3. Regulatory and financial mechanisms for supporting climate change resilient livelihoods strategies.

Output 2.1. Capacities of rural communities for monitoring natural resources and climate change impacts and for adaptive management in two watersheds strengthened

The project supports three types of water monitoring: chemical monitoring, biological monitoring and physical monitoring.

a) Physical monitoring

The major parameter monitored is water recharge. In total, three surface water monitoring posts (one in Kharkhiraa, the West, two in Ulz, Eastern target area) have been newly established with support of the project in addition to existing ones (in the West three, in the East three) in 2013. The operation staff of the posts (ten) are accordingly trained. The project provided equipment including data logger, current meters and thermometers to six surface water monitoring posts (to three posts in the West and three posts in the East, including existing and newly established posts) and adequate training to the staff (totally twelve persons) on the operation of the monitoring equipment.

b) Glacier Monitoring

One Glacier Observation Post was established in Turgen Mountains as a part of the project activities under this component. The station is supposed to provide information on glacier melting in addition to satellite monitoring. The measurements are taken in seven parallels. A post which is positioned in a downhill station and employed by the project is monitoring the depth of melting in summer in regular intervals. Data are collected on a monthly basis for snow melting monitoring to be used in a meso-scale climate study. The PIU is currently checking the technical operationability of the monitoring station.

c) Chemical Water monitoring

For chemical monitoring, the project provided field kits for conducting initial tests, to alert about alarming situations. For in-depth follow ups, measurements within Aimag laboratories complement field tests. About 20 - 30 parameters are measured. For this purpose, the project has equipped three Aimag

laboratories and facilitated their collaboration. Among the three laboratories, the Dornood laboratory received the certification as nationally acknowledged, which is also one of the major success stories of the project.

Results or chemical monitoring: Water monitoring conducted in 2013 had shown that most of the values were far below Mongolia standard values. Only magnesium, sulfate and fluoride were slightly enhanced in one site each which might have been caused by the composition of the paternal rock material the water originates from, while sulfate contents could also be enhanced by nearby tanneries or waste management sites, which needs to be followed up. Enhanced magnesium values are of no harm to human health, but could disturb industrial processes. Nevertheless, the standard values of these elements are only slightly exceeded.

d) Biological Water monitoring

The project has introduced biological water monitoring in schools. Most of these schools are in the process of becoming eco-schools² and welcomed the programme. Biological monitoring is based on the increasing tolerance / intolerance of certain organisms to organic pollution. For the identification of these organisms an indicator list with illustrations of indicator organisms is provided by a project of the Asian Development Bank.

Water monitoring has not yet started in all schools, but where biological monitoring had been conducted, it was received with great enthusiasm, both by teachers and by students. First results have already been achieved. In Dornood Aimag medium organic pollution was identified, obviously through faecal pollution from livestock.

The biological monitoring component creates high synergies with chemical monitoring. As for instance, in Dornood Aimag, where higher level of organic pollution were indicated by biological monitoring, also chemical monitoring showed high ammonium and nitrate levels, therefore indicating faecal contamination, most probably by livestock. To avoid further faecal pollution, separation of livestock/human drinking water is planned as an activity for 2015.

Output 2.2.: Suite of physical techniques to improve ecosystem resilience established in two critical watersheds.

Activities on Pasture-Water Management are very complex and highly integrated on landscape level through the proper linkage of pasture with water management, on administrative level through the integration of Baq, Soum, Aimag and National levels, as well as on operational level through the integration of training, planning and investment.

a) Activities Related to Carrying Capacities

Activities started with trainings which were aiming at integration of pasture management planning into Soum Planning. Training was given by a staff member of the Land Office. Training modules included:

- theory of pasture management
- pasture recovery, pasture retention
- use of pasture maps – rotational cycles
- identification of carrying capacities
- guidelines on pasture management
- technical trainings on mapping with participatory GPS and GIS

The assessment of the carrying capacity considered many parameters, among which pasture productivity translated into sheep units was the most important one. This identification of carrying capacities of the ecosystem under current conditions – not taking into account future scenarios under climate change - was one of the central merits under this component..

² Eco-Schools are a governmental program, which enables schools to get a special focus on environment. To qualify as eco-schools, certain criteria have to be met, such as mainstreaming environment into curricula, planting trees in the school yard etc.. Due to the synergies of this programme with the project objectives, certain features of the eco-school programme are supported by the project.

The need and relevance for assessing carrying capacities within the project area had been evident, as in other Aimags carrying capacities were by far exceeded. As for instance in Central Aimag, the average carrying capacities was 3 – 4 times exceeded, in some Baqs even 11 times.

Furthermore, it is to be expected, that under climate change, with a projected reduction of pasture productivity of about 34%³, current carrying capacities might be further reduced, exacerbated by the decline of water resources through climatic and anthropogenic drivers, which has disrupted the pasture-water-livestock balance, which stresses the relevance of analysing pasture productivity and carrying capacity even more.

While results on carrying capacities based on participatory methods were obviously quite exact, it can be assumed, that the estimated degree, by which they are exceeded, are not based on accurate data, since a livestock census was still going on during the time of the Midterm Review. Therefore, accurate results on livestock densities to be compared with pasture productivity have not yet been available. Nevertheless, for the project area there was high evidence, that carrying capacities were exceeded around the remaining water resources, where livestock was concentrated and pasture productivity was declining both absolutely due to overuse and also relatively in terms of fodder base available per livestock unit.

Finally the project supported the integration of sustainable pasture management into Soum Planning by the foundation of pasture management groups.

Responses to exceeded carrying capacities by project interventions:

As the project has identified the cause for exceeded carrying capacities in the disruption of the livestock-pasture-water balance, the project has consequently responded technically through a development and restoration of water resources within other areas of the catchment, which facilitated the movement of herds to these water resources. Administratively and organizationally the project has responded to support rotational grazing on ecosystem level through facilitating tripartite agreements between herders, Soums and Baqs. Planning of rotational grazing was furthermore supported through participatory mapping of vegetation units and water resources with GPS, which gave an improved overview on pasture resources to the planning levels.

Both the individual activities and even more their combination reduce pressures on pastures and water resources and therefore also enhance incomes for herders, create ownership on pastures through the formation and therefore higher responsibilities of user groups.

It is in particular this combination of interventions, which are an excellent example for proper integration of project activities into ecosystem approaches on planning and implementation level.

Challenge: Long-term solutions to be found on policy level.

The challenges on carrying capacities and relative water resource scarcity on pastures might require new approaches, and in this situation, two scientific schools on grazing management in pastoral systems are in opposition: one is targeting lesser livestock numbers of higher productivity and quality, the other is promoting opportunistic grazing⁴ as the most appropriate management option. The latter claims that opportunistic grazing has been evolved to respond to erratic climates and pasture and would therefore also be the most appropriate response when climate and environment change. This school is also warning that controlled grazing might be a maladaptation, based on scientific findings, that milk, wool and meat yields are four times higher under opportunistic grazing.

³ MEGDT, UNDP and UNEP 2009: Climate Change Adaptation Mongolia. Herders assess the decline to be about 50% due to the additional impacts of diseases.

⁴ Opportunistic grazing means ad-libitum grazing and no control of stocking rates. The two schools are related to two perceptions: one targets reduced livestock numbers particular for climate change adaptation so that feed base per head is enhanced and overgrazing is avoided, another one that lets nature control stocking rates and rangeland reproduction under free mobility, with the viewpoint that erratic climate regimes require also free mobility to make use of the ecosystem niches. The first approach for Mongolia stands for the government, the second one for the behaviour and preference of herders. Source: Millennium Ecosystem Assessment 2005, Volume: Conditions and Trends. Chapter: Drylands.

In the current situation of Mongolia, controlled grazing is promoted on governmental level, both by the Ministry of Environment, Green Development and Tourism as well as by the Ministry of Food and Agriculture, which in particular are in favour of establishing intensified, partially irrigated fodder production niches on pastures. This is in accordance with the National Plan for Climate Change Adaptation of Mongolia; however, herders might be ambivalent on this – on the one hand favouring intensified fodder production, on the other hand being resistant towards destocking and reduced herd sizes, which could dismantle the function of herds for insurance, social prestige and cultural traditions.

Within this tension between the two schools, the project interventions have not yet favoured any of these directions. All interventions, from the formation of pasture user groups up to mapping and water resource development, allow further developments into various directions, which also shows that the project acts strategically wisely.



b) Upstream Catchment Protection and Water Source Development in Midstream and Downstream Areas

To enhance the water – pasture balance, the project made a lot of efforts to protect the upstream catchment and develop or restore water resources in the downstream and midstream areas. This included repairing broken wells, out of which some were equipped with solar display and generator as well as the design and construction of water harvesting structures and the protection of springs.

The project has introduced quite a high number of physical techniques to improve water and pasture resilience. The water related interventions encompassed the rehabilitation of engineered wells, the protection of springs and rehabilitation of creeks in upstream areas, the establishment of various water basins with modern and traditional technologies, and the support to enhanced water monitoring capacities for physical, chemical and biological water conditions as well as of snow melting.

Rehabilitation of engineered wells

Two wells in Dornood Aimag and four wells in Uvs Aimag were repaired until the time of the Midterm Review and three of them were equipped with solar generators. In addition, the project provided support for Meteorology offices to establish ground water monitoring boreholes in five soums of two target basins. Achievements are as follows:

- Favourable condition of availing 22,000 hectares as habitat for the white-naped crane and antelopes from farming and economic activities
- Restoration of 16,000 hectares pastureland which had been abandoned due to water scarcity
- Resolving water supply issue of 15 hectares of agricultural land
- Demonstration of innovative water supply systems for inhabitants and livestock in remote area by central power systems with renewable energy .

Spring Protections in Upstream Areas

In order to create possibilities for degraded springs to restore naturally and maintain and increase fresh quality of water, the project protected twelve springs in Bayandun, Gurvanzagal, Dashbalbar, Chuluunkhoroot soums of Dornod aimag, Ulaangom, Turgen, Naranbulag, Bukhmurun, Khovd soums of Uvs Aimag in 2014 against drying out through overgrazing and trampling around the springs.



Currently indeed summer flow of Ulz river returned, but also precipitation was higher than in previous years, therefore, this fact does not necessarily indicate that this is the result of the protection of springs by the project. According to the Project Progress Report of 2014, the protected springs had the following impacts:

- Provision of more than 500 rural people as well as 69,500 livestock heads with drinking water.
- Run-off of Ulz river and Urtyn river tend to increase.
- Water supply in total 117,000 hectare land in target basins and watering capacity improved up to 69,500 heads of livestock.
- Over 300 citizens learned means and approaches to protect springs using nature-friendly eco-techniques on the spot and acquired skill to do it on their own in the future etc.

Hence, while climate change impacts themselves are not addressed, it is the anthropogenic effects, which exacerbate the impacts of climate change, which are successfully mitigated through the component. .

The project is aware, that the size of the fenced catchment matters and therefore tries to keep it as large as is economically feasible and the terrain allows. Besides that, the project is also taking into account traditional taboos, which prohibit the penetration of soils to avoid that earth spirits would be hurt, if the soil is pierced. This coincides with hydrological findings, that the sub-ground is covered by a dense network of water veins, which is very sensitive and should not be pierced as well. Therefore, instead of digging the ground for fencing, the project is applying a new and culturally compatible technology, by weighting down the fence posts by putting big stones as ballast into their lateral fastenings to fix them. Fences themselves are attached in a slight sloppy angle, which makes them more resilient against damages by animal movements from outside than a straight angle would be which coincides with the considerations.

Traditional Water Harvesting (West) Uvs Aimag Turgen Soum

The project has supported the establishment of various surface water reservoirs and the revival of currently two traditional water reservoirs in the Western project areas. The intervention has to be seen under the strategic approach pursued by the project, to revert the current ratio of surface water to groundwater use of 20 : 80 towards a ratio of 80 : 20.

Traditional water harvesting is using traditional sinks for storing run-off water from mountains. The storage capacity of these sinks has been enhanced through earth dams at the side of the sinks, which have been constructed from the soils dugged out from the sinks. While this has been an appropriate method, as locally available material was used and the use of the topsoil even deepened the sink and further enhanced its storage capacities, this technology consumed a lot of topsoil, and therefore also of pasture, in particular where no other material and means of transport were available. Where pastures are put increasingly under pressure through exceeding livestock numbers and lesser productivity in the face of climate change, this technology is getting less and less feasible and sustainable. The project has therefore improved the traditional technology by replacing the element of constructing earth dams from soils by building stone dams. Stones for the dams were collected from outside areas and transported to the project area by trucks, for which a company was hired. The construction of the water-harvesting scheme created also temporary employment for unemployed local people.

The general strategy pursued by the project of using only 20% groundwater and 80% surface water is properly addressing the hydrologic situation in the country, where groundwater is more or less a non-renewable resource, and surface water is frequently lost as run-off water which is not used.

The intervention of reviving traditional water harvesting schemes itself is very feasible. The improved technology, of replacing earth dams from top soils within the sink is addressing properly the emerging global problem of diminishing soils and the national problem of pressures on pastures. However, as the project is piloting an EbA and therefore also an ecosystem and catchment approach, it would be interesting to compare the environmental costs compared by removing and transporting stones from another area with the environmental costs of removing the top soils from the traditional water harvesting area. While most probably the removal of stones from that other area might even create synergies with pasture productivity through the removal of stone cover, for piloting the technology, this should be supported by robust data.

The creation of synergies of environmental activities with addressing socio-economic problems of local unemployment is highly feasible.

The time used for labour is coincident with international standards and therefore also feasible.



c) Land-Related Activities: Rehabilitation of Riparian Area and Establishment of Ecologically-oriented Agriculture Sites

Riparian area rehabilitation has been implemented with small scale tree nurseries and ecologically-oriented agriculture since 2014, starting with **small scale tree nurseries** in Kharkhiraa, Turgen and Ulz river basins covering 10 ha of riparian area. Local communities have been provided with native seed and seedlings and on the site trainings in tree nursery. Totally 28 hectares of demonstration site to introduce climate change adaptation technologies were established in Bayandun, Bayan-Uul, Chuluunkhoroot, Choibalsan soums of Dornod aimag, Norovlin soum of Khentii aimag and Ulaangom, Turgen, Tarialan, Naranbulag and Khovd soum of Uvs aimag. As a result of this work about 15,000 seedlings of elm, aspen and bush have been produced in tree nurseries for riparian area rehabilitation.

The intervention creates synergies with environmental and income generation targets and is therefore both technically as well as economically feasible. The creation of nurseries has been frequently recommended by many stakeholders as an income generation activity, which should be replicated to other areas. While the income to be generated per farmer would be lower than for vegetable production, around 10,000 Tugrig,

d) Addressing Hazards: Fire and Snow

Damages from fire and snow, which might further increase with climate change, were issues which raised greatest concerns among stakeholders. Within one Aimag, it was reported that steppe fires had caused losses of 1,700 head livestock, one person died, houses of 20 herders were burnt and three people were badly injured. Besides drier weather conditions due to climate change, dryness also enhances the frequency and intensity of fires due to an increase of the dryness of grasses and therefore of flammable fuel loads. This is exacerbated by a change of the snow regime, leading to longer periods without snow and therefore reduced humidity of spring grasses. The most vulnerable season to fires is the hay making season. A lot of livestock dies annually from snow hazards, in particular in 2010 there was a huge catastrophe.

A specific danger are also trans-boundary fires from Russia, and a bilateral agreement has been made with the Russian Government to manage them from both sides.

Traditional responses to steppe fires are known in all communities. The most common ones are:

- Firebreaks of strips without vegetation
- Putting pots on the wind side which divert the fires
- Manure dung dam, which also act as fire breaks.

However, current capacities are not sufficient to prevent and fight fires. While both – snow and fire – are under the mandate of another UNDP project on disaster management, the project gave support on fire management in some selected communities. These included:

- Trainings on fire prevention, improvement of the communication chain for fire alarm (whom to contact first, not getting panicked),
- Roles and activities for fire mitigation (fire brigade),
- Trainings in establishing fire breaks,
- Garage for fire trucks,
- Use of the UNDP weather forecasting system by mobile; when herders receive an alert message for enhanced fire risk on their mobile phone, they start with the three local prevention measures.

e) Energy Issues

Another intervention of balancing energy flows is the introduction of energy meters within the coal-based heating systems of schools, which prevents wasting of coal, but at the same time ensures sufficient temperatures in the school premises. The intervention fills an important gap in controlling energy flows. It allows coal consumption to be better tailored to climate change, therefore is a measure for climate change adaptation, but it also services mitigation targets, as it reduces wasteful carbon emissions through the better control the intervention enables.

To save trees and other organic materials, the project has also started piloting briquetting technologies, with a production rate of 300 kg/day, made from a mixture of coal dust and dung. The technology has been piloted in some Soums within the Eastern steppe and will be promoted widely within 2015. The technology was highly

appreciated in the Soums, where it was introduced, and there was a high demand for its replication in other areas.

Briquetting is an important technology to enhance the efficiency of raw materials which have been mined or harvested for energy purposes. As for instance, coal dust would be wasted if not transformed into briquettes. On the other hand, this cannot be said for dung, and although herders widely use dung as fuel material, there might be alternative uses for dung, which could be more efficient, as for instance, if used for fertilizing greenhouses or even nurseries which would produce fuel wood for energy purposes, where sites are suitable for tree growth. This aspect might even be more relevant, as other beneficiaries interviewed during the evaluation, mentioned that the quality of the briquettes was not always constant, the density frequently too low and the heat conversion rate not sufficient. As the project is highly focussed on environmental flows, it might be a challenge to analyse also energy and nutrient flows and the most efficient uses of dung for alternative options. In case the project would opt for the production of briquettes from coal dust without the use of dung, certainly alternative briquetting technologies would also be available.

Output 2.3.: Regulatory and Financial mechanisms for supporting climate change resilient livelihoods.

a) Supporting Eco-Schools

In all three Aimags visited, schools were in the process of becoming an eco-school, which actual is a governmental initiative. The project supported the transition towards becoming an eco-school mainly by three activities:

- Introduction and promotion of indoor plants
- Promotion of outdoor tree planting
- Introduction of biological water monitoring
- General environmental education

Similar initiatives were also promoted already on kindergarten level.

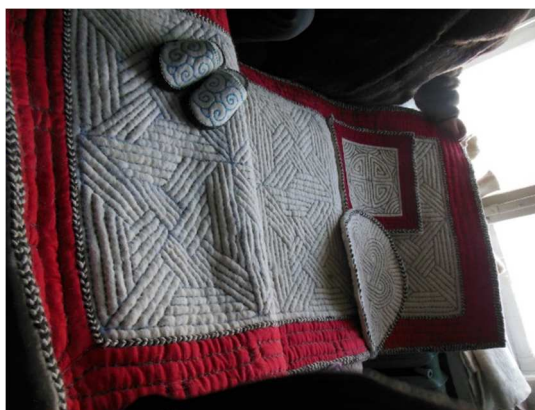


An early start with environmental education will also lead to high environmental awareness in adult age. In particular the planting and caring for trees will enable children also to maintain trees when they leave schools, a practice mostly unknown to herders. However, also herder families themselves have a rich treasure of environmental knowledge, which should preferably be integrated into the environmental education in schools. Legends and fairy tales with respect to nature or old religions practices which protect the environment should be discussed also within lectures or eco-club meetings, and herder knowledge should be mainstreamed into environmental activities so that children are not alienated from their roots.

b) Greenhouses

Greenhouses have dimensions between 45-120 m². Beneficiaries are frequently women headed households. The major marketable products are strawberries, which achieve prices up to 10,000-20,000 Tugrig. Some groups process greenhouse products and produce spices and pickles. All beneficiaries appreciated the skills learned through the intervention, particular the ones, who were also growing rain fed vegetables. The major water-related activity piloted here is drip-irrigation. Greenhouse irrigation is

mainly supplied by wells, but few receive also water by trucks. Some groups were successful already in the first year of the intervention, others made several mistakes, but no group fully failed.



Western area vegetable producers with high skills

Drip irrigation saves about 70% water compared to channel irrigation, therefore, theoretically could be considered as a method to reduce water extraction. However, investment costs are high, which probably restricts the economic feasibility to cases, where the returns from greenhouses are high. Obviously some farmers receive high revenues from strawberry production: between 10,000 to 20,000 Tugrig per kg. However, for situations, where there are no markets for vegetables, drip irrigation might be too cost intensive.

Cost-benefit calculation of drip-irrigation comparing different horticultural products should be conducted, to establish, for which products drip irrigation is mostly feasible for further replication among communities.

In most communities stakeholders recommended furthermore to include nurseries as an additional income generation option, a suggestion which complies very well with the overall target of climate change adaptation, because it creates synergies with livelihood diversification and the improvement of ecosystem services.

Where there are conflicts about stakeholder involvement within the project, mitigation measures as suggested in user associations could be applied, including all stakeholders.

c) Felt Products (Wool Processing Units)

Trainings and the formation of cooperatives for felt products, even for leather products, including the provision of the necessary equipment, have been another initiative by the project for enhancing livelihoods, in this component with a particular gender focus. Usually cooperatives have also a room where they can meet for felt making and to exhibit their products, which, however, is not heated in winter. The target beneficiaries for this component have been mainly groups, which do not originate from Mongolia and therefore are culturally not familiar with felt, such as the Buriat. The products manufactured have a high diversity, ranging from slippers and shoes over seats to carpets. All beneficiary women received the new skills of making beautiful and useful products from felt with great enthusiasm. The further use of these products varied among communities – some used the products in their own households, some tried to sell them, in one Soum the women produced shoes for the dormitories of herder schools from the wool they had received from the herders. The quality for household use is sufficient, but would have to be improved for commercial marketing.

d) Small Grant Proposals

The project has a component of small grant proposals, which gives communities the opportunity to apply for certain grants, which meet the objectives of the project. In particular in the Eastern Steppe, already grants for many communities have been approved. The small grants facilitate project implementation, as the initiative and implementation of the grants is almost fully in the hands of communities, on the other hand, it enhances the diversity of project activities and incomes of communities. The general criteria for selection of proposals are the need they address and the coherence with the EbA strategy. Up to now, the number of proposals submitted have not yet exceeded the financial budget allocated to this purpose and the only proposals which have been rejected were the ones which were not in line with

the overall EbA strategy of the project, such as certain fruit trees outside areas of their ecological suitability. Currently small grant proposals are mainly related to improve agricultural production. Problems related to the proposals are:

- Hardly any proposal is related to improve environmental flows or disasters.
- Some people do not know how to develop proposals

For enhancing the scope and diversity of small grant proposals, the project could also encourage proposals on environmental issues such as improved fire management, traditional water harvesting, animal protection against heavy snow falls, general protection against damages from cold (even though this pressure might be relieved under climate change), furthermore projects on the improvement of environmental flows, such as nutrient exchange between herders and farmers etc..

Table 7: Overview over Small Grant Proposals

	Totally received		Granted		Type of activity											
	Number of received SG proposals	Proposed budget, \$	Number of granted SG	Approved budget, \$	Main activity								other			
					drip irrigation, green house	Dairy production	Reforestation and tree nursery	Eco school& kindergarten and	Wool& animal skin production	Hay making& fodder production	Fruit gardening	Well rehabilitation& Wood souvenir production using	Bee keeping	Eco tour	Improvement of livestock breed	Eco fertilizer production
Total	119	434.528	52	150.216	7	4	5	9	11	5	1	3	1	3	1	1

4.2.3. Component III

Component III: Strengthening capacities/Institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies.

Output 3.1: Ecosystem-based adaptation approaches/integrated river basin management mainstreamed in national resource use planning and implementation mechanisms in sector policies

Output 3.2.: Institutional structure for river basin management integrating climate change risks (Administration and Council) established and operation in the target areas as model for replication

Output 3.3.: Best practices are identified and program for up-scaling best practices developed and implemented

a) River Basin Management

Between 2012 and 2014 a set of environmental laws were amended and approved by the Parliament of Mongolia. Concepts such as establishment of River Basin Administration (RBA) and RBA Management Plans were introduced into the Law on Water and Law on Water pollution, which shows that the project indeed management to mainstream ecosystem-based adaptation approaches into planning mechanisms of sector policies. The mainstreaming of EbA into laws stabilizes the concept of EbA within the Mongolian legislation and is an important achievement of the project, which also contributes to enhanced sustainability and stability.

The capacities of the RBAs have been substantially improved through IWRM plan development, provision of equipment and various trainings in water harvesting, water use efficiency and soft skills. The integration of IWRM plan development and the formation of water user associations into RBAs has been particular useful in Western areas, where vegetable growers had violent conflicts about water resources before, which were substantially mitigated through IWRM. Since IWRM has been successfully integrated as a planning method at governmental levels, institutions are also now capacitated to handle upcoming water conflicts in future.

IWRM itself promoted also inter-sectoral collaboration, which hardly existed on Aimag levels before. Since inter-sectoral collaboration is also essential for the implementation of climate policies in general, also other projects will benefit from the structures the project has built.

The project also supports River Basin Councils to ensure civil society participation in water management through monitoring the RBAs. Currently some RBCs are not yet well established due to a lack of funds, however, the important step forward the project has made lies in the involvement of civil society in water management issues at all.

b) Dissemination

The project has introduced many best practices which could be up-scaled and disseminated. For this purpose, the project has collaborated with a press agency to publish its documents and is active in awareness raising on climate risks also on a website, which will disseminate these lessons for further replication. The project is also active in supporting environmental journalism and competitions on journalism on climate change in rural areas,

4.2.4. Cross-cutting issues: Trainings

Trainings have preceded all activities of the project and all outcomes. For an improved reading flow they are therefore here presented as cross-cutting issues, and it might be recommendable to consider them as cross-cutting issues also in the logframe.

The trainings of the project have been appreciated by all interviewed stakeholders and also in focus group interviews. Stakeholders were addressed by various trainings according to their roles, and therefore also their appreciation for the training differs. On governmental and planning levels the trainings on water resource use efficiency and GIS have been considered as most valuable and important.

Women appreciated mostly the felt-making. While felt making is an old tradition in Mongolia, for the targeted beneficiary groups, like Buriat and others, it has not been part of their culture before. Therefore

trainings added substantially to their basic skills for improved livelihoods and in all cooperatives visited women were highly satisfied to be able to produce useful and beautiful products.

A particular added value was seen in the training of irrigated vegetable gardening in greenhouses in the Eastern Steppe, where this technology had not been known before. In the Altai mountains stakeholders have been vegetable producers since historical times and considered themselves therefore as experts in this technology, able to provide trainings themselves.

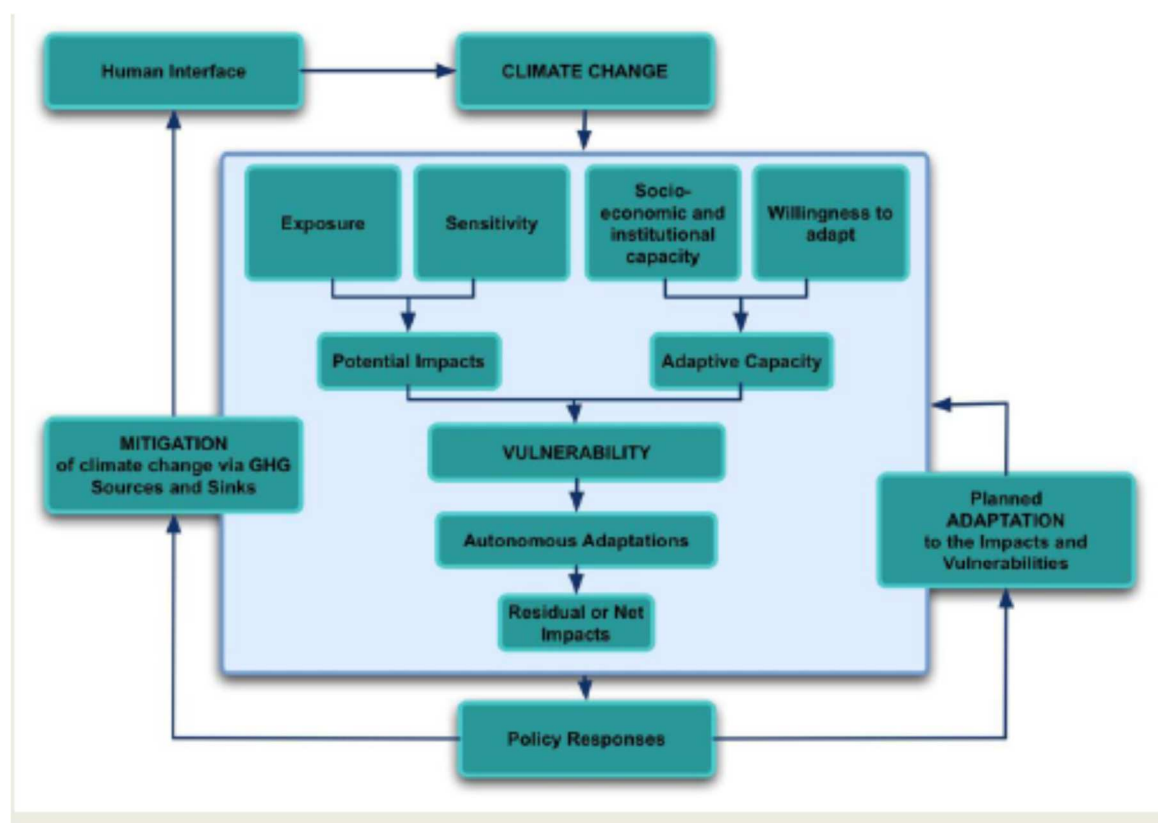
The trainings regarded as most relevant for climate change adaptation have been fire protection and pasture management.

Quality of Trainings

It was confirmed that the trainers were very competent, and trainings were of high relevance and quality. While most of the trainings had taken place in Ulaanbaatar, many stakeholders recommended to conduct also trainings on local level, in particular trainings with more practical implications for herders. For the evaluators this was an important aspect to enhance the adaptive capacities on grass root level, which would, however, probably require substantial amounts of additional funds for many more additional trainings. Despite the high appreciation of the trainings, the training components were not perceived as the initiation of the project, instead most stakeholders considered only the start of investments and practical interventions as the “real” start of the project.

4.2.5. Strategic Analysis

Figure 4: Framework for EbA Approach



EbA strategies aim at the maintenance and repair of ecosystems to enhance the delivery of ecosystem services, which are the result of the interaction of ecosystems with social and environmental systems across a range of scales. This requires interventions to address the range of drivers which influence ecosystem service delivery. A thorough strategic analysis includes variables that contain specific vulnerabilities to climate variability and extreme events as well as the underlying causes of vulnerability and their interconnectedness.

Vulnerability is impacted by exposure and sensitivity to climate change on the one hand, of offset by adaptive capabilities composed of socio-economic and institutional capacity and the willingness to adapt on the other.

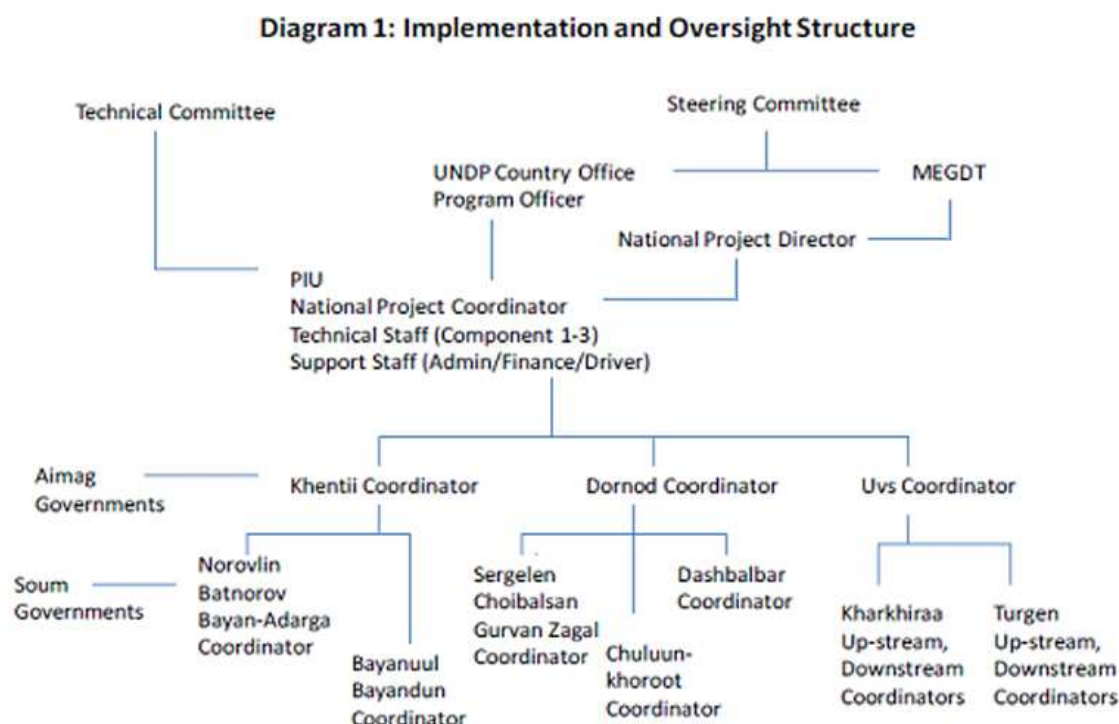
The project strategy addresses a multiple range of technical, institutional and socio-economic interventions which create mutual synergies among each other to combine into a strong adaptive strategy. Autonomous adaptation interventions can offset again vulnerability to a smaller or larger degree, which have to be addressed by policy interventions to re-strengthen adaptive capacities again

In the case of the project, enhanced sensitivities are identified in the area of reduced water resources and declining pasture availability, which enhances the vulnerability of the socio-ecological system in particular due to increased steppe fires and declining water and pasture resources and a reduction of biodiversity. Institutions had a certain budget to offset the impacts, in particular of steppe fires, but there were not enough knowledge and skills with respect to participatory management, conflict mitigation measures and not sufficient budget for full disaster prevention. In the beginning of the project, there was not an unwillingness to adapt to climate change, but a lack of awareness on climate change impacts and options to adapt. An explicit unwillingness to adaptation would probably have been there under the conditions of high water extraction during the former Soviet wheat irrigation schemes, but since these are no longer in place, the project could address current lack of adaptation measures through awareness raising measures and trainings in Integrated Water Management and Improved Water Use Efficiency etc.. The project enhanced also the skills of local communities to adapt to climate change on economic and ecological levels through various trainings. The project reduced the sensitivity to climate change through the introduction of “physical capital” in form of various structures for spring protection and the establishment of water basins etc. In addition to that the project enhanced ecological resilience of rangelands through the enlargement of protected areas and improving pasture productivity. The project has reduced also the exposure of communities to negative climate change impacts, in this case to water scarcity and declining feed resources, by enabling herders to move to more productive pastures by rehabilitating water resources there, improving by this the water-pasture-livestock balances. Besides these interventions which already fulfil all criteria for EbA, the project has additionally done everything possible to enhance resilience, measured in terms of ecosystem and social connectivity and stability. The project strategy is fully interconnecting all landscape elements. The rehabilitations of springs in sub-catchments are connected to the larger river catchment and enhance total base-flows. Protected areas exist as mosaics between wetlands and rangelands. The management of wetlands is fully intertwined with pasture management leading to a balanced and fully optimized use of resources. Socio-economically this is interconnected with certain measures for improved income generation. Further synergies of water and pasture management are created by the additional component of energy management, in particular briquetting, which will save manure and wood used for fuel, there again enhancing land productivity and water flows by retaining more nutrients for agricultural and rangeland and water flow in rangelands. The most impressive component of the project are the stability building factors, by inscribing successfully all these measures into existing laws, regulations and frameworks of governments and new or already existing institutions such as river basin authorities. Overall this proves that the strategy of the project has worked well.

4.3. Project Implementation and Adaptive Management

4.3.1. Management Arrangements

Figure 5: Implementation and Oversight Structure⁵



The overall effectiveness of the project management, as outlined in the Project Document, is high, Responsibilities and reporting lines are clear, decision making is transparent. The coordination between PIU and Aimags through the EbA project coordinators as well as through the linkages with UNDP and governments in all administrative units of the project area, which allows and equitable representation of all governmental units, is excellent.

The establishment of a technical committee has been an important strategic step, as the technical committee could fill initial technical gaps of hired staff, and furthermore give continuous technical advice during project implementation.

NPC and PIU have an excellent reputation among all stakeholders – from Line Ministries to local partners. On the local level, it is the very timely operation of the project, the fact that implementation is directly followed by the planning activities, the project's reliability and responsiveness, which is appreciated about the project management. Local governments appreciate also very much the presence of the local coordinators, as it is facilitating intersectoral collaboration and capacity building on climate change adaptation issues.

On Ministry level it is in particular the great competency and dynamism of the MPC and PIU, and the fact, that indeed the project is a great support to the Ministries to fulfil national endeavours in climate change adaptation, which is also new on the environmental agenda.

NPC and all members of the PIU have an excellent professional background, most of them with a higher degree from Europe, others have been University lecturers before or have other types of proven technical expertise.

The NPC has been exchanged after about the first project year, and the general view is, that the project has been managed much better since then.

4.3.2. Work Planning

All project work has been accomplished according to planning, sometimes even ahead. While the activities planned in the first component have almost all been completed, other activities to be up-scaled in Component 2 have only been fulfilled to about 20%, which is normal, since also the different components are implemented successively. There is no doubt that the project will fulfil its plan until the end of the project.

All stakeholders interviewed during the evaluation appreciated the timeliness of all activities, in particular, that planning was immediately followed by actions. Delays, which were mentioned in project reports, such as a delay in conducting baseline studies and Soum level assessment due to the central and local parliament election held in June and November 2012, as well as delays of recruiting project staff due to lack of available technical expertise were not noticed by stakeholders and it would have been beyond the means of the project management to circumvent these obstacles. The duration of the delays themselves was negligible and was even compensated by accelerated activities in the second half of the project year. The establishment of a technical committee composed of nationally recognized scientists and highly qualified experts from the Mongolian Academy of Sciences and leading universities enriched the technical expertise of the project and accelerated project progress. Even common delays by the Ministry of Finance of money transfers were not mirrored in delayed procurement of necessary items as it frequently is the case in other projects. Moreover, all project staff as well as the staff of aligned governmental agencies is highly knowledgeable, responsible, and committed to the overall goal of environmental health. It was also acknowledged by key governmental officials, that environmental health and climate adaptations are the pre-conditions for sustainable economic growth.

4.3.3 Financial Arrangement

The project is financed by governmental institutions and by UNDP (cash). Financial efficiency has not been assessed by comparing activity by activity with standard costs or costs in other projects in detail. Instead the total portfolio of activities and procured items was compared with projects of similar financial volumes, and it can be said, that indeed the number of successful interventions has been higher than in comparable projects known to the evaluation team. Therefore, also the financial efficiency of the project can be considered as excellent.

The contribution of 50% by the government to the strategic goals of the project shows its high commitment for climate change and EbA approaches. The distribution of funds has not been changed during the project lifetime, which also demonstrates that the original financial design of the project has found continuous endorsement by governmental entities.

The amount of expenditures until the date of the MTR reflects also the number and succession of project activities and therefore are also strategically well-placed.

Table 8: Co-Financing

Sources of Co-financing ⁶	Name of Co-financer	Type of Co-financing ⁷	Amount Confirmed at CEO endorsement (US\$)	Actual Amount Contributed at stage of Midterm Review (US\$)	Actual % of Expected Amount
The Government budget	Ministry of Environment, Green Development and Tourism (MEGDT)	Office supplying for the Project implementation unit in Ulaanbaatar city	113,245.03	56,622.52	50.0%

⁶ Sources of Co-financing may include: Bilateral Aid Agency(ies), Foundation, GEF Partner Agency, Local Government, National Government, Civil Society Organization, Other Multi-lateral Agency(ies), Private Sector, Other

⁷Type of Co-financing may include: Grant, Soft Loan, Hard Loan, Guarantee, In-Kind, Other

The Government budget	MEGDT	Annual budget for 2 target River Basin Administration of Ulz and Kharkhira/Turgen river basin	320,971.30	191,280.35	59.6%
The Government budget	MEGDT	Annual budget for Climate change coordination office of Mongolia	205,298.01	139,072.85	67.7%
Relevant project stakeholders provide financial and human resource contribution to project	Experts& staffs of MEGDT and its branch organization	Inputs from the Implementation partner, MEGDT, in mode of providing advice, professional skills	330,000.00	165,000.00	50.0%
The Government budget	Aimag government	Office supplying for local project units in 9 soums, and relevant expenses such as heating and electricity	230,487.02	62,582.78	27.2%
The Government budget	Aimag government	Conference hall supplying		4,139.07	
The Government budget	Aimag government	The target aimag and soums committed a total of USD 3.3 million (2.8 for Ulz, 0.5 in Kharkhira/Turgen) for implementation of EbA pilot measures reflected in the IWRM Plans.	3,800,000.00	760,000.00	20.0%
TOTAL			5,000,001.37	1,378,697.57	274.5%

It is not possible to give more information about the expenditure of co-finances, as the PIU has not yet detailed the information to date. It is recommended to give more attention to reporting on the management of co-finances within the second project phase.

4.3.4. Project level monitoring and evaluation systems

The project monitoring and evaluation system in this case is closely intertwined with the logframe, and the logframe analysis of Chapter 3 applies partly also for the monitoring and evaluation systems. However, additionally it is suggested to review indicators of the M&E system, in particular to design sound output indicators. This is in detail described in Annex II.

4.3.5. Stakeholder Engagement

Table 5 lists the stakeholders involved into project implementation and their anticipated roles. These are political institutions on all levels as well as technical institutions as well as communities as the major beneficiaries. MEGD is well-placed as the main implementing agency, as it is also the responsible institution for implementing the UNFCCC. The integration of the Ministry of Food and Agriculture in project planning and implementation is also of paramount importance to streamline agricultural interests with environmental targets. All technical institutions such as Administration for Land Affairs, the Meteorological Association including the Institute of Hydrology and scientific organizations are very important for scientific backing of the project.

River Basin Councils are one of the core stakeholders of the project and necessary to ensure the multi-stakeholder dialogues of River Basin Agencies.

The project has collaborated excellently with all these institutions, and has particular merits even in stimulating multi-disciplinary and cross-sectoral dialogues under the umbrella of climate change adaptation, which has not yet been common in the country up to now.

The project is fully country-driven, as it strategically contributes to the National Climate Change Adaptation Plan of Mongolia. It is fully owned also by stakeholders on community level, as already in the inception phase the project has aligned national adaptation plans with local needs in a very detailed way, which are comprehensively outlined in the Inception Report of the Project.

Local beneficiaries have been selected on the basis of their needs – in particular the needs of women-headed households, their willingness and capacities. In one community it was recommended to initiate the beginning of the project more officially on local governmental level, which would have brought even more stakeholders on board.

4.3.6. Reporting

In general the text of progress reports is clear, well-structured and the topics selected for reporting are comprehensively addressed. Reports on Project Board meetings address concisely most important issues.

The answers to the evaluation matrix which compares achievements with indicators in the progress report are lengthy and detailed, demonstrating the willingness of the project team to work hard on any issues, but it is difficult to extract those data, which are really relevant to assess the project achievement.

Sometimes the issues reported do not refer to the indicators required, such as *“the importance of releasing habitats of Demoiselle Crane and Mongolian Gazelle from grazing were considered to select wells in eastern. As a result, 22.000 hectares of area were released from grazing”*, which is reported to the indicator of reduced water extraction. Furthermore the inadequacy of indicators and targets reported to leads sometimes to double reporting of some issues, in particular between Component 1 and 3, where indicators are not always easy to be distinguished.

As some targets are not clear, they do not allow appropriate reporting.

To assess project achievement on time-scales is hindered by the fact, that work plans and activities are only developed on an annual basis, which makes it difficult to assess, where the project stands in comparison to the targeted achievements at the end. This might be illustrated for instance by the finding, that most of the targets as set in the current logframe are already fulfilled or over-fulfilled, but targets which will still be pursued in the second phase, such as the introduction of briquetting technologies, is mentioned nowhere. On the other hand, it is difficult to figure out under the currently existing frameworks, how those (few) targets, whose fulfilment is still lacking behind, like the coverage of land rehabilitation activities, will be covered in the second phase of the project.

This is furthermore exacerbated by the absence of Midterm indicators.

General issues reported in the project report have a very strong political and scientific focus, and refer contextually more to Component 1 and 3 of the logframe rather than to Component 2. However, during the field visits and even during the visits of institutions in Ulaanbaatar it was the impression of the evaluation team, that the major merits of the project were rather seen in their practical solutions on the ground. Therefore, reporting seems to have an “urban” bias, focussing on the issues which are discussed during board and planning meetings in the capital, less following up what is happening on the ground. Therefore, the second phase might consider to fill gaps in reporting about the local level, facilitated also by tailoring indicators better to local levels.

4.3.7. Communication

The project could not have had all these successes, if the communication would not have been excellent. Communication between UNDP and PIU is almost on daily basis and in harmony, as well as among PIU and Ministries and other stakeholders. The communication between PIU and Aimags is facilitated through the project coordinators placed in the Aimags, which on their behalf facilitate the communication between Soum cooperatives and Aimags governments. The presence of the coordinators has also enhanced inter-sectoral communication, since the coordinators themselves communicate with all sectors, which made the sectors also communicate among each other. A further entity for enhanced communication is the creation of user groups and cooperatives, which allows better communication and collaboration among each other as well as with external institutions.

Local and National stakeholders are more or less enthusiastic about the project, which demonstrates that the project has also the merit of having communicated the topic of ecosystem approach, which has been novel and unusual to most stakeholders, so well that it was adopted without any problem under the concept of climate change, which was also new to most of them.

Summary of Sustainability and Global benefits

The project has substantial global benefits in carbon sequestration and biodiversity and water resource protection.

- Assuming that under climate change 8 – 37% of the pasture is degraded, the rehabilitation of these pastures would offset high quantities of carbon emission, an amount which should be calculated under the ecological economic assessment of Component 1.
- Biodiversity protection has been improved through the enlargement of protected areas and rehabilitation of adjacent wetlands, where certain significant migratory bird species had returned to.
- Protection of global water resources: Through its water management components, the project has also saved, protected and augmented global water resources, such as the base flows in major river systems of Mongolia.

In the aspect of sustainability, the project managed to merge ecological, social and environmental sustainability through the creation of intersectoral institutions such as RBAs, RBCs, and IWRM, supported institutionally on all administrative levels and through legislation. The project has created many synergies among its interventions, such as the improvement of pasture productivity through strategic placement of water resources in areas where carrying capacities were lower, the strengthening of hydrological dynamics through land rehabilitation, the synergy of land rehabilitation with biodiversity protection and improved options for livelihoods as for instance through ecotourism, and synergies among the energy sector with land protection through briquette production, which would save future fuel wood resources and manure.

4.3.8. Project Effectiveness

Table 8 compares the effectiveness in achieving targets based on the Matrix of the Inception Report Methodology described in Annex III. The more detailed presentation along the template by the TOR is presented in Annex II, as it is very long due to the high number of indicators. The result is, that most targets have already been reached, mainly the ones related to assessments and developing strategies, while larger up-scaling of water use efficiency measures and land protections will have to be completed in the second project phase. As the monitoring framework of the project does not provide midterm indicators, it is not really possible to provide statements of the effectiveness of the project based on Midterm indicators, but all activities have been fulfilled timely according to work plan, and the progress, based on the activities observed, seems to be substantial.

Table 9: Analysis of Effectiveness: Comparing Targets with Project Achievements

Project Component	Target	Result	Target met during MTR	Target most likely to be met at Project end ⁸
Project Objective: Maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes	Annual in-stream summer 30-day base flow at 2.0 cms in Karkhiraa River, at 2.40 cms at Turgen river and at 0.20 cms at Utz River	Summer base flow of Ulz river has been increased, to previous level, but it could not be distinguished, if this has been the result of enhanced precipitation or of project interventions, which mitigated negative anthropogenic influences on water resources.	x	x
	5% improvement of surface water quality at the above sites measured by chemical and biological indicators	The target was reached on an average, but not fall elements.	-	x
Component 1: Landscape level integrated land use and water resources monitoring and planning system focused on reduction of ecosystem vulnerability to climate change	Two operational EbA strategies in place 6 EbA active Aimags in place	In all Aimags more than two EbA strategies have been put into place and mainstreamed into governmental frameworks, as for instance at least IWRM, sustainable pasture management, etc..	x	xx
	Altay Mountains / GLB: 39,420 km ² , Kharkhiraa/Turgen: 1,000 km ² Eastern Steppe: 44,676 km ² , Ulz: 3,750 km ² included into natural protection system	The target had already been fulfilled during the MTR. In all Aimags visited in Eastern Steppe, proposals to be registered as natural protection area had already been approved at Aimag level, and are now submitted to national level, therefore the target is most likely to be met in nearest future	On its way	x
Component 2: Landscape level adaptation techniques maintaining ecosystem integrity and water security under conditions of climate change	Total Soums with EbA strategic Programs: 17 Level of water extraction irrigation for project sites for Kharkhiraa/Turgen about 20% decreased compared to baseline	The number of Soums with EbA strategic programs has been over-fulfilled, also all Soums visited during the evaluation were implementing EbA strategic programs already now during the MTR.	Verified for the Soums visited	x

⁸ X = "target likely to be met at project end"; XX = target already met during MTR.

	Number of monitored efficient wells in Kharkhiraa/Turgen: 12 Ulz: 70	Successful efforts of riparian / wetland restoration could be confirmed, as well as of sustainable grazing practices, though the area could not be verified	Verified for Soums visited	x
	Appr. 10% increase compared to baseline			
	1250 ha riparian / wetland restored in Kharkhiraa/Turgen, and 2250 ha in Ulz			
	1500 km2 in Kharkhiraa/Turgen covered with EbA grazing practices, 12 000 km2 in Ulz (30% compared to baseline)			
	10% poverty rate decreased in 17 Soums in targeted watersheds	Efforts to enhance incomes could be witnessed, though it could not be verified that incomes would be raised to the expected rate	Efforts made	Poverty rates will be decreased, but the expected rate is currently difficult to access
Component 3: Institutional and policy capacity strengthened to support EAB replication, planning monitoring, and enforcement for critical watersheds	76 Parliament members with increased EbA knowledge 30 Agency managers with increased EbA knowledge 21 Aimags and 329 Soum governments with increased EbA knowledge	The numbers could not be verified, but in all institutions visited EbA knowledge of policy makers and agency managers had substantially increased	On its way	X
	15 Soums replicating EbA	Already now the Soums visited are replicating EbA	On its way	x

In summary it can be said, that, already during this Midterm Review, all targets were met, and that there is no doubt, that more targets will be met by the end of the project.

4.3.9 Gender Issues

Gender consideration was taken into account already in the baseline studies. The MTR could confirm that activities specified to economic needs of women, in particular of women-headed households, were properly addressed in particular through enhancing and diversifying income generation from processing felt products and from horticultural products. Women were also involved in all committees and improved their skills in business planning.

Nevertheless, still it seemed that men had access to more lucrative income generation activities. As for instance, while also women own herds, still most income from herding is earned by men. However, this is a global pattern, though not as common in Mongolia as in other countries, but not a particular failure of the project. Gender-related income effects also depend on intra-household gender relationships rather than on the question on immediate incomes earned. This should be more closely addressed in future through participatory analysis, how women themselves view these kinds of equity issues. Also a specific assessment of current incomes achieved by women under current conditions and a stock-taking exercise of income generating opportunities for women in rural areas might be helpful to tailor future activities more closely to women's livelihood needs.

It was striking, that the particular vulnerability of women to low temperatures was not adequately addressed by the project. The reason for this might not necessarily lie in a neglect of specific gender related vulnerabilities, but rather in the fact, that the project addresses rather global warming than remaining coldness. At any rate, many stations where women acted as posts or convened in cooperatives, such as the water monitoring stations, as well as the rooms where women cooperatives for felt-making came together, were not well-heated, which was frequently complained about, not only by the women themselves, but also on institutional levels. Meanwhile the project established a small dwelling for the post at the glacier monitoring station.

4.3.10. Special issues

In the following, some questions provided in the TOR will be answered.

Questions for the Analysis of Financial Risks

- *Was understanding of climate change risk and enhanced GOM budget enough motivation for policy makers to prioritize climate resilience over non-sustainable short-term economic benefits?*

Climate risks were understood well so far. Policy makers were not yet in the situation that the pursuing of short-term economic benefit was in conflict with climate change adaptation. This might have been the case under the high water-consuming, large-scale cereal production regimes under the Soviet Union. Under the current land use conditions within the targeted regions, governments acknowledged the synergies between climate change adaptation and economic welfare, though none of the governmental officials was ready to actively enhance governmental budget for climate change adaptation. Particular expectation was put on potential incomes from tourism, if more wetlands would become registered Protected Areas. Suggestions by governmental officials were to raise income for maintenance of physical structures for climate change adaptation, to charge fees from the beneficiaries of these interventions, or from the members of the water user committees, respectively.

- *Are non-climatic drivers for ecosystem alteration sufficiently addressed by project?*

Non-climatic drivers are well addressed through the protection of springs from trampling, through improved pasture management which will reduce management-related degradation and enhanced runoff water and through general awareness creation and training and water use efficiency.

- *Level and frequency of natural disasters and their impact on communities' confidence in climate adaptation: have project measures reduced vulnerability of natural disasters in particular of herders' communities. Are current successes in climate adaptation sufficient to build incentives for further CCA.*

Major natural disasters are enhanced water scarcity, fire and snow, which are increasingly threatening the lives of humans and livestock. The enhanced frequency experienced by communities has increased the demand for climate change adaptation interventions. The project has to a certain degree mitigated water scarcity, in particular for watering livestock, and contributed to a limited degree supported to fire

mitigation. It has up to now not yet intervened on natural disasters caused by snow; however, disasters, and also disaster prevention, do not directly fall into its mandate, but are covered by a different project. However, it is recommendable, that where the project objective has linkages to those disasters, interventions should be foreseen.

- *Are adaptation measures gender sensitive and do they close inequality gaps?*

Adaptation measures benefit women, as for instance through improved access to water of better quality, improved pasture productivity and certain income generation activities. Some of these interventions are gender neutral and not particularly designed to address women's vulnerability, but have a higher impact on women than on men, as for instance the water-related interventions. Income-generating activities close inequality gaps between men and women to the certain degree, as overarching settings do allow it. Gender-disaggregated data would not be sufficient to capture the particular vulnerability of women, instead specific vulnerability profiles of women should be established and gender-specific actions targeting these specific vulnerabilities should be included into the project design.

- *Do local capacities match demands?*

The project has substantially enhanced local skills in planning and management and now match the demand to a great extent. Stakeholders mentioned, that the gaps which currently exist to adapt to climate change, are rather practical and on herder levels. Therefore communities would appreciate trainings which are really practical. Furthermore, in many cases equipment, in particular for disaster management is lacking.

Other Issues to be assessed

- *Quality and effectiveness of environmental strategy*

The environmental strategy pursued by the EbA project is highly effective, in particular due to the high synergies it creates, on the one hand through the introduction of participatory, integrated approaches, such as integrated water management, and water and pastoral user associations, on the other hand also through the synergies between pastoral management and water management, through the combination of traditional approaches of natural resource and water managed with modern approaches, and the excellent integration of all levels, from household to Baq to District and governmental level .

- *Ecosystem management capacities on Aimag and Soum levels. Which specific guidance tools have been provided for ecosystem management planning?*

The project provided numerous manuals on water use efficiency, integrated water and pasture management, on assessing pasture carrying capacities, on water monitoring and many others.

- *Integration of sectoral decision making, information quality*

Inter-sectoral decision making and information quality has been obviously substantially improved in particular on Aimag and Soum level, especially through the presence of the project coordinators, who have their offices in the governmental premises. Their communication with different sectors has also facilitated the communication among these sectors.

- *Capacities of government and decision makers to identify, assess climate risks, and mainstream them into water, land and resource management.*

It is not really the mandate of governments and decision makers to identify and assess climate risks. This is rather the task of climate scientists and meteorologists and it is also their task, to communicate this efficiently to decision makers. In this case, the project has successfully facilitated this communication through its various workshops, conferences, meetings and publications, so that during the Midterm Review no doubt was left, that these risks are sufficiently understood on governmental levels. Also the project's trainings to mainstream climate risks into water, land and resource management are fully received and applied now on governmental levels.

- *Diagnosis of climate resilience of communities – as well as its progress- Ingredients of resilience.*

The diagnosis of climate resilience of communities is a relatively complex topic, which requires usually an own framework for analysis.

Using the climate resilience framework by IUCN, which identifies four major ingredients for resilience which are: self-regulation (on planning level), adaptive learning, diversification of ecosystems and income generating activities as well as of sustainable technologies, it can be said that the project interventions have contributed a lot to strengthen these ingredients. .

On outcome level, climate resilience is mainly measured through the household economy approach, which is measuring the five types of capitals – human, financial, natural, physical and social – it can be said, that the project has also made substantial achievements in improving all these types of capital: social capital through the establishment of different use associations, human capital through the various trainings, natural capital through the EbA approach itself, physical capital through the various structures for water harvesting and saving, and financial capital as an outcome of the multiplication of the other forms of capital with each other.

- *Holistic management approaches that embrace climate risks*

Major climate risks are enhanced dryness, fires and snowfall. The project addresses the problem of dryness through holistic interventions within the water cycle by addressing planning and technical levels, through the strategic integration of water and pasture management. On social and political level it addresses integrated water management within River Basin Management Authorities and Councils. Interventions in fire risk management are rather fragmentary, since the project has also not an explicit mandate for fire management.. No interventions are foreseen for snow hazards.

4.4: Sustainability of the Project

Table 10: Risk Assessment

Project Component	Assumptions of Risks	Results
Project Objective	Are hydrological reporting stations still operational?	They are operational and reporting stations are increasing
	Comparison of impacts of climate change on water flows with adaptation achievements	Currently methodologies are not sufficient to assess the impacts of adaptation achievements on water flows and distinguish them from the influences of climate variabilities. It is recommended to use historical data as baselines to distinguish the impact of different amounts of precipitation on water flows and in this way also allow to distinguish between climatic and adaptation impacts on water flows.
Component 1: Landscape level integrated land use and water resources monitoring and planning system focused on reduction of ecosystem vulnerability to climate change	Does capacity of national stakeholders match demand and how was this alleviated by the project capacity building strategy	All stakeholders confirmed, that the quality of capacity building was meeting the demands, but that more stakeholders should be involved.
	Has protected area expansion been approved by government structures	Protected area expansion had been approved on Aimag level already, and the submission to national level is on the way.
Component 2: Landscape level adaptation techniques maintaining ecosystem integrity and water security under conditions of climate change	Capacity of Aimag / Soum level match project demands. Proposed interventions able to deliver EbA results (alleviated by strategic and participatory planning implemented under Component One that will identify and prioritize actions based upon local needs.)	Project demands widely met, however, certain engineering capacities, particularly within the hydrological field, could be strengthened. Interventions able to deliver EbA results and meet local needs

<p>Component 3: Institutional and policy capacity strengthened to support EbA replication, planning monitoring, and enforcement for critical watersheds</p>	<p>National, provincial and district level receptive to project's EbA knowledge building approach (alleviated by project's information and market development strategies)</p> <p>Government willing and able to finance project activities. (GOM budget likely to increase. Incentive issues alleviated by project strategy of linking success demonstrations with comprehensive capacity building efforts.</p>	<p>All policy levels highly receptive and appreciative to EbA's knowledge approach</p> <p>Currently little governmental willingness to finance project activities. This might change, if incomes are strengthened through tourism in protected areas, or if governmental budgets are spared in other areas, as for instance when budgets for disaster managements for instance for fire responses could be saved. Currently government's suggestions are that user associations would contribute fees to the interventions, not only for financial reasons, but also to create ownership.</p>
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a) Financial Sustainability

There are still some certain financial risks to sustainability. Currently climate change impacts are not considered as having economic impacts that are so severe that governments would feel alerted to finance adaptation under the restricted budgets available to them. However, as governments expect certain revenues from eco-tourism in protected areas which have been extended by the project, they might be willing to invest into future protection of these areas. This enhances the likelihood that financial and economic resources will continue to be available to EbA and CCA, considering the high financial commitment of the government already now, and future sources which the private sector might provide.

While many institutional interventions, such as the water and pasture user groups which have been established, WRMs and RCs will also be sustainable without future financial support, some of the physical structures will need maintenance. To ensure financial sustainability, it is recommended, that the project introduces fees to be paid by user associations for maintenance, in particular of wells and springs, but also for greenhouses and other interventions. Another finance mechanism might be derived from water taxes.

b) Social Sustainability

All stakeholders highly appreciate the benefits accrued to them by the project and are also aware of the impacts of climate change and anthropogenic harms to water sources, therefore, fully in agreement to continue to preserve and continue project achievements within this line.

The project has created important associations and agencies, such as water user, pasture user and vegetable grower associations, as well as River Basin Councils and strengthened the work of River Basin Authorities. Apart from the close connectivity which has been emerged within these social entities and their common commitment of addressing climate change, these institutions have also achieved a lot in mitigating social conflicts. These achievements will be long-lasting.

There are currently no social or political risks which jeopardize the sustainability of project outcomes.

The project addresses fully all stakeholder' needs. Therefore, the interest of stakeholders to maintain the achievements of the project is high. This is demonstrated by the fact, that beneficiaries – not the project – suggested to contribute to the maintenance of constructions through payments of water fees. The maintenance of project achievements is also given through the high integration of the project into the climate change adaptation strategy of the government. The commitment towards EbA is also demonstrated by the high amount of governmental co-financing, which would be lost, if EbA strategies would not be further supported at the end of the project. The project has developed an awareness strategy and a strategy for further dissemination of lessons learned, which will ensure the continuation of climate change adaptation efforts also in future. Awareness on climate change as a consequence of project interventions is already high now, and has been further strengthened by making it part of the legislation.

c) Institutional Sustainability

From its beginning, the project has built institutional awareness and capacities for the adaptation to climate change in particular through integrated water management, pastoral management and land rehabilitation through extending protected areas. The project has made also sure from the beginning, that these adaptation measures are integrated into Soum and Aimag governmental plans.

It has been part of the project interventions themselves, to mainstream EbA issues into legal frameworks, governance structures and processes in a way, that they will not jeopardize the sustenance of project benefits, but on the contrary contribute to the sustainable implementation of EbA interventions also in future.

All institutions appreciate the activities of the project to a very high degree and are most likely to continue them in future.

d) Ecological Sustainability

The project interventions have contributed to improved ecological health, which is a self-regulating process, and therefore has enhanced the ecological sustainability also for the time of the end of the project. The only environmental risk which might occur to a higher degree and might materialize in higher contamination rates of water resources could occur through the expansion of mining areas.

5. Conclusions and Recommendations

5.1. Conclusions

The Project is in general very well perceived by stakeholders and has visible impacts. Strengths are overlying the weaknesses of the project by far for the following reasons:

- The Management Arrangement ensures appropriately that all necessary roles are covered by the different stakeholders. The project has also substantially supported inter-sectoral collaboration under the umbrella of climate change adaptation. The project is very time efficient. All activities are implemented according to plan, immediate action follows planning.
- All activities have been very relevant to stakeholders and to national priorities of climate change adaptation.
- The performance of the project in almost all components is highly satisfactory. The EbA strategy is excellently implemented through a landscape approach.
- The project has special merits in introducing IWRM into River Basin Management Agencies, as well as in civil society involvement in River Basin Councils; it has merits in participatory management of pastures and in balancing water-pasture resources related to livestock numbers and carrying capacities of pastures. One of the major highlights of the project is that it successfully supported communities to create additional governmentally recognized protected areas around wetlands. The project has furthermore piloted various spring protection technologies, improved and supported traditional and modern water harvesting technologies, it has enhanced capacities for physical, chemical and biological monitoring and managed to integrate all levels of stakeholders, from kindergarten and school level to Bac, Soum, Aimag and National levels. The project has also supported various income generating activities and managed to integrate various sectors under the umbrella of creating climate resilience. Hence, within project implementation hardly any shortcomings could be noticed.
- The project has made measurable progress in all indicators.

The only problem, which might exist, could rather be identified on project design level. The project logframe has many sub-components, which are not all instrumental in serving the overall objective of the project. The same is also mirrored in the high number of activities, which are doubtlessly all very beneficial for the stakeholders, but are not all coherent in contributing to the project goal. Indicators in most cases are SMART, but there is no real distinction between output, outcome and impact indicators. Some indicators are redundant or not feasible and should be abandoned. Gender issues could be better elaborated in the logframe. It furthermore seems that targets have frequently been set arbitrarily and do not reflect the scale on which they can be measured which also hinders appropriate reporting in certain ways.

Two technical outputs are not well covered: the ecological economic evaluation, for which not even a proper scope has been defined, and the monitoring of glaciers, which does not seem to monitor glacier melting properly, and furthermore does not result in proper technical action, as for instance assessing the dimensions of melting water which could be harvested etc.. In general, while also the technical performance of the project is highly satisfactory, the project could benefit from better hydrologic engineering expertise within all water related components.

5.2. Recommendations

Table 11: Summary of Recommendations

Rec #	Recommendation	Entity Responsible	Scope
0	The project is strategically fully in line with its major objective and implemented with high effectiveness, therefore should continue in this direction with some amendments in the project strategy	UNDP	Full project level
Corrective Actions of Project Design			

1	<p>Strengthening of impact and outcome level indicator monitoring and revising at least one output indicator:</p> <p>- For overall Project Goal use data for “<i>stream base flows</i>” and “<i>Soil organic C</i>” and <u>data from glacier monitoring</u> for tracking not as impact indicators. Delete “<i>soil colour</i>” and “<i>ph</i>” value as indicators. If institutions have access to remote sensing data for soil moisture, this could be as an impact indicator with a target of not going below a historical average. Other soil data cannot be measured on watershed scales.</p> <p>Use either “<i>Ratio of extraction of surface water resources : ground water resources for extraction higher than 20:80</i>” as an indicator on watershed level and discuss with appropriate institutions about a feasible target. Or use “<i>number of surface water resources and their productivity/capacity</i>” as an indicator for water related ecosystem services. Use “<i>ecosystem connectivity</i>” as reported to the CBD, measured by linkages between ecosystems as another EbA related indicator on watershed level.</p> <p>Replace target for “<i>5% improvement</i>” of chemical substances in water sources by “<i>not higher than Mongolian Standard values</i>” and take action only when contamination rates are converging against this value.</p> <p>Replace “<i>reduced poverty rate</i>” by “<i>enhanced incomes</i>” on watershed level.</p> <p>On Aimag level or sub-watershed level it is also possible to use these indicators as outcome indicators.</p> <p>Another appropriate outcome indicator/target for <u>Component 2</u> is: “<i>improved livestock-pasture-water resources balance</i>” measured by <u>livestock numbers: water and pasture resources within sub-watersheds, compared to carrying capacities</u> measured within the project.</p> <p>Add an <u>Output indicator</u> which measures energy related activities to Component 2.</p> <p>It would furthermore be nice to distinguish between a land and a water related subcomponent or respective output indicators in Component 2.</p> <p>One might furthermore think about the contextual cohesion of the outputs in Component 3 and might which to shift one or another output to another component, as considered in Annex I.</p> <p>The project should in future be more consistent with language using “Outputs” and “Outcomes” etc.</p>	PIU collaboration with UNDP	in	Logframe
2	Report about the use of co-finance resources in more detail within the second phase of the project.	PIU collaboration with UNDP	in	M&E Framework
3	Introduce Benchmarks and Training Plan in addition to Work Plans	PIU Collaboration with UNDP	in	Work Plan
Immediate Benefits				

4	Establish a vulnerability profile of women, especially with respect to cold weather conditions and discrimination in income generation options. With respect to coldness, water monitoring posts should be provided with small dwellings like the one which the post for glacier monitoring has already received. If possible provide in-door toilets in schools	PIU	Single Activities to protect project attached staff
5	Improve ecological economic valuation scope	PIU in collaboration with UNDP	Output-related intervention
6	Link spring protection with provision of water basins for livestock	PIU	Set of Combined Activities
7	Reduce evapotranspiration in water harvesting schemes	PIU	Single Activity
8	Pilote water regeneration schemes of higher density	PIU	Single Activity
Addressing and Re-Enforcing Benefits			
9	Address snow hazards	PIU	Single Activity
10	Integration of fire management into EbA management	PIU	Strategic Intervention
11	Introduce Sustainable Intensification of pastures	PIU	Single Activity
12	Taka a mosaic landscapes approach	UNDP and PIU	Strategic Approach on Project Level
13	Strengthening wool / sheep / pasture value chain	PIU	Strategic Approach on Project level
14	Streamlining poverty reduction targets with environmental targets	UNDP and PIU	Strategic Approach on Project level
15	Introduce collection of water fees for maintenance of structures	PIU	Single Activity
16	Enhance research and implementation of traditional water harvesting	PIU	Single Activity
17	Paying more attention to snow melt and green water flows	PIU	Single Activity
18	Introduce EbA related activities into Small Grant proposals	PIU	Strategic Intervention on Output level
19	Strengthening Inter-Sectoral Collaboration among Ministries	UNDP	Strategic Intervention
20	Promoting environmental journalism on local levels	PIU	Single Activity
21	Conduct exchange visits of beneficiaries among different Aimags and target river basins	PIU	Single Activities
22	Add traditional ecological knowledge into environmental education of eco-schools	PIU	Single Activity

5.2.1. Corrective actions for the design, implementation, monitoring, and evaluation of the Project

#1 Strengthening of Impact and Outcome Level Indicator Monitoring and Revising at least one Output Indicator

Strengthening of impact and outcome level indicator monitoring including replacement of some impact and outcome indicators with some stronger and more suitable ones and adding one output indicator is recommended for the following issues with reference to the Analysis given in Section 4.1.2.:

For overall **Project Goal** use data for “*stream base flows*” and “*Soil organic C*” and data from glacier monitoring for tracking, do not use them as impact indicators. Delete “*soil colour*” and “*ph*” value as indicators. If institutions have access to remote sensing data for soil moisture, this could be as an impact indicator with a target of not going below a historical average. Other soil data cannot be measured on watershed scales.

Use either “*Ratio of extraction of surface water resources : ground water resources for extraction higher than 20:80*” as an indicator on watershed level and discuss with appropriate institutions about a feasible target. Or use “*number of surface water resources and their productivity/capacity*” as an indicator for water related ecosystem services. Use “*ecosystem connectivity*” as reported to the CBD, measured by linkages between ecosystems as another EbA related indicator on watershed level.

Replace target for “*5% improvement*” of chemical substances in water sources by “*not higher than Mongolian Standard values*” and take action only when contamination rates are converging against this value.

Replace “*reduced poverty rate*” by “*enhanced incomes*” on watershed level.

On Aimag level or sub-watershed level it is also possible to use these indicators as outcome indicators. Another appropriate outcome indicator/target for Component 2 is: “*improved livestock-pasture-water resources balance*” measured by livestock numbers: water and pasture resources within sub-watersheds, compared to carrying capacities measured within the project.

Add an Output indicator which measures energy related activities to Component 2.

It would furthermore be nice to distinguish between a land and a water related subcomponent or respective output indicators in Component 2.

One might furthermore think about the contextual cohesion of the outputs in Component 3 and might wish to shift one or another output to another component, as considered in Annex I.

The project should in future be more consistent with language using “Outputs” and “Outcomes” etc.

2 Report about the use of co-finance resources in more detail within the second phase of the project

Data on the expenses of co-finance resources did not meet the requirements for the mid-term evaluation. For the coming phase of the project it is recommended to report on this data in more detail.

3 Training Plans and Additional Benchmarks to Work Plans

As work plans are re-formulated every year, one might consider to introduce benchmark for better follow-up for a lengthier period.

One might consider to establish a separate training plan, which gives an overview of all trainings and the areas they are implemented.

5.2.2. Actions to Follow up or Reinforce Initial Benefits from the Project

4 Establishing Vulnerability Profiles of Women and Taking them into Account in Logframe and Implementation

For addressing the specific vulnerability of women under climate change, it might be valuable to establish a certain vulnerability profile, which will help to better tailor activities to their specific needs. This should include in particular activities to coldness, and exclusion processes from income generation activities.

5 Improve Ecological Economic Valuation

Ecological economic valuation should be further strengthened and pursued, and should not be restricted to future climate change risks, but also to compare the economic impacts of current options for different interventions. Results should be policy relevant and highlight where to place investments best. They also should inform about future land productivity and its impact on income generation. Cost-benefit analyses should be conducted for the drip-irrigation scheme under the assumption of different degree of market integration for products. The economic feasibility of drip-irrigation schemes might not be given, if not all green-house products would be marketed. UNDP and PIU had following expectations from the results of the assessment, which should be taken into account. :

- Economic valuation of key ecosystem services (especially water resources for pasture/livestock, drinking water in urban and rural areas, agriculture, mining, wildlife/tourism etc.)
- Anticipated damage from CC on water resources under different climate change scenarios compared with “Business As Usual” scenarios
- Likely economic value of benefits of different adaptation options to manage climate change risks on water resources (for pasture/livestock, drinking water in urban and rural areas, agriculture, mining, wildlife/tourism etc.)
- Costs of necessary investments in US\$
- Economic Rates of Return for alternative adaptation options.

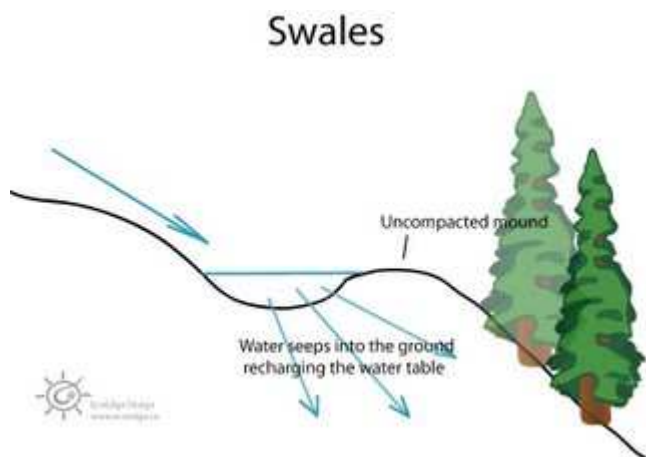
It is suggested that in addition to the previous approach by Yale University, the INVEST model by Natural Capital Project by Stanford University could be used. The Natural Capital Project provides a downloadable full-dynamic computer model free of charge as well as free-online trainings for its use, or low-cost trainings in various countries, which staff from responsible institutions could attend (compare <http://www.naturalcapitalproject.org/> and <http://www.naturalcapitalproject.org/InVEST.html> to download the ecological economic models). The INVEST model is run on ArcGIS 9.1 and above, therefore, the previous GIS trainings provided by the project can be utilized also to apply these models. Alternatively, an international consultant could be hired to conduct ecological economic valuations on the respective questions.

6 Spring Protection and Watering of Livestock

Constructions to divert the water into surface water for drinking and into surface water for creeks could be more effective, if they would be supported by more contours. As for instance, around the place behind the fence, where surface water for livestock watering is collected, one could construct a sink, a swale or a small dam as illustrated below. A diversion dam could be built to ensure that spring water is really conducted into a creek through diversion ditches or is harvested downhill and then diverted into a ditch or swale, to ensure that the run-off water, which is augmented through the fence, is not lost as run-off water further downhill, which is in particular likely, if the more down-hill pastures are degraded. The project in general and in particular this component would benefit from further hydrological engineering input, which could for instance determine the necessary size for the fenced area around the spring, and the necessary dimensions for the drinking water collection based on the ratio between spring productivity and the numbers of livestock to be watered.

A more detailed scheme is illustrated in Annex V.

Figure 6: Example of using Swales for Spring Protection



An alternative method to prevent trampling is to construct a collection pool at the spring and then channel or pipe the water to the pasture field or into a trough from which livestock can drink. Fences or other simple structures can be erected to trap drifting and blowing snow so that it will melt on the pasture in springtime or can be collected and stored. A storage structure for snow or ice can be made with stone

walls 20 cm thick (bound by concrete) and a concrete floor. Such a structure should be shaded and out of the way of the spring flood.

7 Reducing Evapotranspiration in Water Harvesting Schemes

The intervention above is similar to an intervention of reducing evapotranspiration in Water Harvesting Schemes. A lot of water from water harvesting basins will be lost during summertime through evapotranspiration. Covering water reservoirs or establishing underground reservoirs or dams might be an alternative, which the project might wish to consider.

8 Monitoring water flows on smaller scales and piloting water regeneration schemes of higher density

Currently, the impacts of spring rehabilitation are only monitored through base-flows of larger river systems. This might not reflect the hydrological reality, as the impact of spring rehabilitation might be too small to have measurable impact on the wider catchment, particular since this is also influenced by other factors, which might overlay the impacts of spring protection, as for instance precipitation, downstream irrigation, land use change etc. Rather than monitoring the big water systems, one might better start monitoring the creeks, which are regenerated by the project. To enhance the impacts of creek regeneration, one might also prefer to pilot the rehabilitation of many creeks in one sub-catchment rather than rehabilitating few creeks within a number of sub-catchments. Otherwise the project will monitor impacts, which cannot be expected from the scale and density of interventions.

5.2.3. Proposals for Future Directions Underlining Main Objectives

9 Addressing Snow Hazards

Preventing and addressing hazards from snow as requested by communities would be a worthwhile intervention for climate change adaptation, and activities might include the establishment of physical structures for the protection of livestock and houses from snow, early warning systems of snow hazards, mobility etc. To give further recommendations is beyond the expertise of the consultants, but the project might discuss, if this would fall under its mandate at all or would be rather have to be covered by other projects. In the former case it might even consider to hire a consultant to give advice on such interventions.

10 Fire Management and Protection of Head Waters and Steppe Grasses

Governments highlighted the urgent needs for further support in fire management, as currently all governmental budgets for emergencies are now spent on fire. This indicates the increasingly higher significance of fire management compared to other emergencies. Detailed suggestions for fire management were the needs for small cars, spare parts, and uniforms.

While it is beyond the scope of the EbA project to address all needs mentioned by communities. It is recommendable for UNDP to consider to start an extra project on wildfires, particularly on trans-boundary fires, which is an appropriate task for an international UN organization.

Within the EbA project – to remain within the scope of the project – one might concentrate on the protection of headwaters from fires, and reduce dryness of steppe grasses through ecosystem based interventions, so that in total the flammable fuel load will be reduced.

11 Supporting Sustainable Intensification of Pastoralism

The project is requested by the Ministry of Agriculture, to support the piloting of irrigated fodder production as a new activity, which is also in line with the Mongolian National Climate Change Adaptation Plan. The project can up this suggestion within certain niches, where the hydrological conditions would allow this intervention. At the same time, the project should give guidance and recommendations, where hydrological conditions restrict intensified livestock use and nomadic or transhumant pastoralism should be maintained, and where and if hydrological conditions and cultural settings would rather be in favour of controlled grazing.

12 Mosaic Landscapes

The various EbA interventions on landscape levels could be implemented through a mosaic landscape approach, where different interlinked land use and production systems are integrated as a mosaic into landscapes. These could be for instances mosaics of crop production, irrigated and non-irrigated fodder

banks, rangelands, protected areas, bioprospecting and eco-tourism sites to mainstream poverty issues into EbA (compare # 13).

13 Streamlining and Enhancing Poverty Reduction Targets with Environmental Targets

One of the project targets is to reduce the poverty rate. To streamline this target with the overall project objective, it is necessary a) to either reduce poverty through activities which serve the environmental target of the project, or b) harness the environmental activities of the project to reduce poverty, or c) promote alternative income generating activities or technologies for income generating activities, which reduce the pressure on environmental stocks or flows. Within the present project livelihood activities, greenhouses fall under activity c), felt-making could fall under a), if providing a successful promotion of the sheep value chain, and ecotourism in future Protected Areas would fall under b). Also the suggested nurseries would all be under b). The project should further promote such activities, in particular nurseries would also be an activity related to category b), which would create synergies with income generation and environmental targets.

14 Strengthening the Sheep/Wool Value Chain where Appropriate

If possible, initiatives to enhance the sheep/value chain should be strengthened, through economic incentives by enhancing the demand for products from sheep, wherever possible within the scope of the project. An increased proportion of sheep within the herds is beneficial for pasture productivity and therefore also for maintaining and enhancing green water flows through the reduction of run-off water. The project needs to consider closely, which activities – like felt-making and others – could be up-scaled and if up-scaling is possible under the mandate of this project, or if this component is sufficiently covered by other projects and could be abandoned. If there were an opportunity to enhance the activity to a large scale, so that it could act as an economic incentive to keep more sheep in the herd, it would have also positive impacts on pastures, as currently on an average the proportion of goats to sheep in herds is 70:30. This proportion has contributed to the degradation of pastures by goats, and a reverse ratio of 30 percent goats and 70 percent sheep would be sound to sustain the productivity of pasture, which on the other hand would also reduce water run-off and save water resources. It is however doubtful, that the current wool-processing activities would have such impacts on the larger value scale. Therefore, one might consider the following options for the future:

- Enhancing the scale of felt production, specializing on few products of really good quality with the help of design specialists, who help to improve quality and design of products and of market specialist. The final product would then not necessary be household items, but could also be felt/wool for isolation and other purposes.
- Leaving commercial production to few women or cooperatives, which have a real interest to conduct felt-making on a day-to-day level, and the rest for subsistence level.
- A third option would be, to link the activity with the Green Gold project of the Swiss government, which is more dealing with pasture rehabilitation and livestock value chains.

15 Collection of Water Fees

For better maintenance of physical constructions for water management it is suggested by beneficiaries themselves to collect water fees in water user groups.

16 Strengthening Inter-Sectoral Collaboration among Ministries

Inter-sectoral collaboration between different line ministries takes place, but could be strengthened. The project could for instance suggest the creation of an interdisciplinary committee of staff from all Ministries, which regular analyses policies and regulations in their complementarity with respect to water and climate change and promotes necessary reforms.

17 Promoting Traditional Water Harvesting

Traditional water harvesting should further be encouraged and promoted, also other forms as the one introduced here. For instance, there is also the tradition of water harvesting by ice dams, which creates small artificial glaciers, as run-off water coming from the mountains is frozen by the ice and harvested over the winter as ice, and melting in spring, when the agricultural/horticultural season starts. Also these traditional methods would require some engineering advice on proper dimensioning of the scheme, as for instance one governor in the West mentioned, this method has once caused a flood in the village,

as too much ice was harvested, melting obviously also too fast. It is suggested, that the PIU assigns a Master thesis on this method or even a larger assessment.

18 *Paying more attention to snow and green water as part of the hydrological cycle*

Despite the establishment of a glacier monitoring station by the project, snow and ice dynamics do not receive the same attention as part of the hydrological cycle as blue water. Snow dynamics should not only be monitored in mountain areas, but also with respect to drinking water resources for livestock, and as a source for plant moisture. On the other hand, the capacities of ice for water harvesting and water saving could be strengthened.

Snowmelt and summer rainwater can be collected through building small stone dams along slopes to slow down the runoff of water and allow more of it to be absorbed into the soil. Other simple measures to improve pasture water supply include piping water from rivers and springs or building water collection structures, such as small reservoirs and water tanks. However, it is important that the total volume of annual rain and the location of the collection structure are considered carefully to avoid over-extraction of water, as well as to minimize water loss.

The same applies for green water, which will in particular decline under climate change. Hydrological flows should therefore be managed in a way, that green water remains most of the time within the soil horizons through respective adaptation of cropping calendar, continuous land cover, adapted crop and grass varieties etc.

Snow is part of hydrological flows, and the project should consider interventions which protect livestock from heavy snow fall, furthermore the project should also consider interventions for the case of lacking snowfall and the impact on water resources for livestock. .

19 *Small Grant Proposals*

As mentioned above, the project could encourage that more environmental issues are addressed through Small Grant proposals

20 *Promoting environmental journalism on local levels*

Environmental journalisms on local levels could be promoted for further awareness raising and information exchange on environmental problems under the auspices of the press agency with whom the project collaborates, and contests among environmental journalists could be conducted.

22 *Exchange Visits*

High demand was expressed to conduct exchange visits to other areas to collect information, how EbA approaches are implemented in other areas and to exchange experience.

Annex I: Analysis of Outputs and Activities

Project Outputs, Indicators and Activities

OUTCOME 1: INTEGRATED STRATEGIES/MANAGEMENT PLANS FOR TARGET LANDSCAPES/RIVER BASINS DEVELOPED AND UNDER IMPLEMENTATION

Outputs	Activities	Indicators
Output 1.1.: Ecological and Socio-economic Assessments (Baseline studies) as a basis for the development of Ecosystem-based Adaptation strategies for the target landscapes and for the development of River Basin Management Plans (Kharkhira/Turgen Ulz)	<p>1.1.1. Generate detailed inventories (water, wildlife, livestock, forest, land use, pasture condition, special conservation values) and assessments of resource/ecosystem services condition in the target river basins.</p> <p>1.1.2. Produce detailed social and economic assessment (agriculture, livelihood, development sectors, cultural values) for 2 target areas for the development of integrated strategies/river basin management plans.</p> <p>1.1.3. Development Knowledge Management Strategy and support establishment and maintenance of databases in relevant agencies to improve information management</p>	<p>1. Number of integrated strategies/management plans for river basins approved and adopted by National and Aimag Governments⁹</p> <p>2. Number of Aimag governments monitoring, assessing, and reporting to MEGD and relevant agencies (water authority, National Climate Change Coordination Office) on integrated river basin management measures</p> <p>3. Guidelines on IWRM address climate risks (and integrate adaptation measures and EbA approaches) developed</p>
Output 1.2.: Economic Valuations completed comparing the landscape level costs and benefits of EbA.	<p>1.2.1. Support establishment of Taskforce (Working Group) led by NDIC to guide Economic Valuation Study design and execution.</p> <p>1.2.2. Prepare tender, and select contractor(s) to compile existing background information for the Economic Valuation Study, and to undertake (1st round of) Economic Valuation Studies</p> <p>1.2.3. Support national capacity development for economic valuations of EbA strategies and ecosystem services under climate change conditions.</p>	<p>4. Total hectares included within protected areas system in the two project sites</p>
Output 1.3.: Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (Khakhira/Turgen, Ulz) completed and operated	<p>1.3.1. Prepare tender and contract expert(s) to undertake a Vulnerability Assessment of the target landscapes.</p> <p>1.3.2. Facilitate stakeholder collaboration for the development of Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (for Kharkhira/Turgen, and Ulz)</p>	

Soundness of Output Formulations

Output 1.3. repeats the Result Area through the formulation “*Ecosystem-based Adaptation strategies for the target landscapes and River Basin Management Plans (Khakhira/Turgen, Ulz) completed and operation.*”, therefore is rather redundant on the one hand, on the other hand an output which is really completing the operation of the strategies is still missing. The formulation “Adaptation strategies for the target landscapes and River Basin Management Plans (Khakhira/Turgen, Ulz) completed” puts landscapes and management plans on the same level, and should be replaced by “Adaptation strategies for the target landscapes and River Basins (Khakhira/Turgen, Ulz). Completed...” This difference is important, because the river basin management plan might be such a strategy and an appropriate output

⁹ By project close, the National Government and each Aimag within the Altai/GLB and Eastern Steppe landscapes will have adopted the EbA strategic process as formal policy

to be formulated might then be: *“Ecosystem-based Climate Change Adaptation strategies for landscapes and river basins are developed.”*

It is furthermore recommendable to expand Output 1.1. and 1.3 in a way that they also embrace IWRM and PAs in a more comprehensive way, as these are also measured by the indicators (see below).

Relation between activities and outputs

For Output 1, activities are rather formulated in a general way. This can be appropriate, but it should be made sure, that the general enumeration of inventories and assessments is comprehensive and accurate and congruent with the topics mentioned in the work plan. If this would make activities look overloaded, one might think of creating sub-activities.

In general it would be recommendable, to provide a separate a complete plan of inventories and assessments to be conducted within the project, together with a schedule, when these assessments would have to be accomplished.

Relationships of indicators between outputs and outcomes

Landscape level – Component 1, national level Component 2

Indicators 1 and 2 are almost identical with indicators in Component 3 as they are referring to the adoption of EbA strategies into Aimag or Soum policies. However, Component 1 only serves the development of strategies to address climate change, and not yet their integration into policy plans, which is the mandate of Component 3. This needs to be clearly distinguished. It is therefore rather recommendable, either to shift Indicators 1 and 2 to Component 3 and align them with Indicators 6 – 9 and reformulate indicators instead: *“Number of inventories on topics a...x, which have been successfully completed”* and *“number of strategies developed for climate change adaptation and number of Soums and Aimag..”*, or else, shift Output 3.1. to Component 1, and still align those indicators as suggested.

In none of the indicators any specific economic measure is mentioned, one might therefore wonder about the role of the ecological economic assessment. It is therefore recommendable to include an indicator such as *“Number of EbA interventions, for which current and future costs and benefits have been calculated”*.

OUTCOME 2: IMPLEMENTING LANDSCAPE LEVEL ADAPTATION TECHNIQUES TO MAINTAIN ECOSYSTEM INTEGRITY AND WATER SECURITY UNDER CONDITIONS OF CLIMATE CHANGE

Output	Activities	Indicators
Output 2.1.: Capacities of rural communities for monitoring and natural resources and climate change impacts and for adaptive management in two watersheds strengthened.	2.1.1. Undertake Soum level needs assessment for capacity development, and develop capacity building programme for 2 target areas.	2.1 Number of Soums in target area considering EbA measures/Integrated River Basin Management into their annual land-use planning and in Soum development plans and strategies. 2.2 Water use efficiency improved to maintain ecosystem integrity as measured by: 2.2.1 Amount of surface water extracted for irrigation in project sites (cubic meter 2.2.2 Number of monitored wells increasing ground-water consumption efficiency in project sites 2.2.3 Small scale Rain and snow melt Water harvesting 2.3. ¹⁰ Land use practices and climate change resilience improved as indicated by 2.3.1 Total hectares of riparian and wetland habitat restored with native vegetation within project sites 2.3.2 Springs protected with livestock enclosures, Livestock watering and access to creeks managed with appropriate facilities/fencing
	2.1.2. Design community based monitoring programme with tools and mechanisms to monitor and assess the health and status of their ecosystem based on current practices and experiences.	
	2.1.3. Undertake 1 st series of trainings for communities on monitoring guideline tools, mechanisms and indicators	
Output 2.2: Suite of physical techniques to improve ecosystem resilience established in two critical watersheds.	2.2.1 Identify priority areas, and undertake feasibility studies to implement adaptation measures to improve ecosystem resilience and services in each Soum	
	2.2.2. Support to and training in implementation of adaptation techniques to improve ecosystem services and resilience with community participation.	
	2.2.3. Support development of annual land use and pasture management plans that integrate adaptation techniques, discuss co-	

¹⁰ Number added by evaluator

Output 2.3. Regulatory and financial mechanisms for supporting climate change resilient livelihood strategies.	financing opportunities for implementation of plans, and support implementation.	2.3.3 Total area with improved pasture land management
	2.2.4. Support to improve technical and human capacity of glacial run-off and water monitoring networks in target areas.	2.3.4 Areas with Reforestation and improved forest management in Western target areas
	2.3.1. Explore options to support climate change resilient livelihood strategies	2.4 Decrease in average Rural Poverty rate for 17 Soums within the target watersheds.
	2.3.2. Support activities to develop climate change resilient livelihood strategies through diversification, alternative incomes, value addition to local products	2.5 Number of Small Enterprises established and operating successfully 2.6 Hydrological monitoring is strengthened

Feasibility of Outputs / Coherence Issues

The Result Area reflects very well one important component of resilience building: Sustainable Technologies.

In general the Outputs are feasible, but one might also think of creating Capacity Building as an own Outcome, and shift Output 2.1 to such a Capacity Building Outcome. The remaining Outputs 2.2. on a suite of technical interventions, and Output 2.3 on livelihoods issues, are more consistent to create one single Outcome area. As indicators for Output 2.2. address both water and land issues, one might divide this Outcome accordingly.

The component should also create an Outcome area on energy issues, which have been identified as activities in the field, but have not been captured by the Logframe.

Relation between activities and outputs

Activities reflect very well the character of resilience through self-regulation and learning activities by communities.

Activities 2.1.1. and 2.2.1 could also have been covered already under Component 1. Output 1.2, since the development of strategies would normally also include the definition of interventions.

Activities 2.1.3. should be related to all activities under this outputs, not only to a 1st series. For scheduling of these different activities the same applies as what has been said for Component 1.

Activity 2.2.2 as a training component should be shifted to Output 2.1. or to an extra Outcome Area on Trainings and Capacity Building to be built.

Activity 2.2.3 is already reflected in outputs and activities of component 1: *“Establishment of management plans.”*

Livelihood activities such as wool processing and vegetable growing might be related to the current Output 2.3 and better be emphasized there. It should be mentioned, that vegetable growing is a joint activity also with water management through with drip-irrigation, and this part is captured under Output 2.2.

Relationships of indicators between outputs and outcomes

Indicator 2.1: Is obviously linked to Output 2.1. and related activities, but the contextual linkages to the output is not clear, not even the linkage with the Result Area. As the indicator rather measure the integration of the adaptation strategies into governmental frameworks, one might rather switch the indicator to Component 3 and align it with indicators 6 – 9.

2.2 Water use efficiency improved to maintain ecosystem integrity as measured by:

2.2.1 Amount of surface water extracted for irrigation in project sites (cubic meter)

2.2.2 Number of monitored wells increasing ground-water consumption efficiency in project sites

2.2.3 Small scale Rain and snow melt Water harvesting

It seems that Indicator 2.2. is meant as an outcome indicator and 2.2.1 – 2.2.3 are the related output indicators and should be positioned accordingly.

If 2.2. is an outcome indicator, it should also be measured, as for instance by a percentage of improved water use efficiency.

2.2.1 and 2.2.2 are SMART output indicators, however, 2.2.3 is not expressed as an indicator. It should re-formulated towards “number and volume of small scale rain and snow melt water harvesting.” It does not seem that the output indicators measure all interventions in the field comprehensively, one might therefore add also an output indicator on number of sites for spring-water development.

2.3. seems to be another outcome indicator, measuring various outputs. It is not clear, what the ordinal number 2.3. refers to. Obviously all sub-ordinated indicators are related to land management, maybe in an earlier version there had been an output related to land management. It is suggested to re-introduce this output here.

Indicators 2.4 and 2.5 seem both to belong to livelihoods issues, while 2.4. is an overarching one and 2.5 the output indicator. As indicator 2.4 is also used as an impact indicator for the general project objective, and indeed measures impacts of all components, it should be deleted from here.

Indicator 2.6 is obviously related to the accomplishment of the installation of a glacier monitoring and two surface water monitoring stations, and therefore an Output Indicator, which belongs to the output indicators under 2.2..

Project Output III: Strengthening Capacities/Institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies		
Output	Activities	Indicators
Output 3.1.: Ecosystem-based adaptation approaches/integrated river basin management mainstreamed in national resource use planning and implementation mechanisms in sector policies	3.1.1. Conduct institutional capacity and needs assessment of NCC Authority, CCCO and related key agencies including legislative, financial and regulatory frameworks of EbA management and deliver recommendations for relevant agencies	River Basin Councils and sub-councils established and strengthened in target areas 1. Number of staffs of relevant agencies and local governments trained in river basin management guidelines 2. Number of Soums replicating EbA measures and integrated river basin management principles and practices within the target eco-regions 3. National mainstreaming of EbA as indicated by:
	3.1.2 Develop National level EbA Institutional Capacity Building Programme and Action Plan	
	3.1.3. Support in implementation of Institutional Capacity Building Programme	
	3.1.4. Support review of Soum and Aimag level development plans/strategies/policies and develop recommendations to integrate EbA approaches.	
Output 3.2.: Institutional structure for river basin management integrating climate change risks (Administration and Council) established and operational in the target areas as model for replication.	3.2.1. Support to the establishment process of the Integrated river Basin/Sub-basin management Administrations and Councils for 3 river basin/sub-basins	• Number of official government policy documents adopting EbA principles/practices 4. Amount of annual government spending to support application of EbA principles and practices nationally 5. Number of National Climate Change Authority EbA policy documents mainstreaming EbA within sectoral decision-making frameworks.
	3.2.2. Support to the development of a guideline to prepare Integrated River Basin Management Strategy and Action Plans integrating climate change risks	
	3.2.3. Conduct capacity building trainings for administration/council officers	
Output 3.3.: Best practices are identified and program for up-scaling best practices development and implemented.	3.3.1. Promote public awareness through media: newsletter, radio, TV and forums	
	3.3.2. Produce publications (guideline, workshop and study reports, manuals, updated flier)	
	3.3.3. Establish and maintain an “Interactive Climate Change Resilience Website”	
	3.3.4. Prepare 1 st annual “State of the Ecosystem” report and disseminate to stakeholders and relevant agencies for further planning and monitoring of ecosystem state	

General Comment

Obviously in this component the project tries to address cross-cut the policy level with the capacity building level. This makes the whole logframe clumsy, and creates duplications and inconsistencies.

Within Output 3.1. the integration of EbA strategies and management plans into governmental frameworks might be appropriate here, however, the output is very similar to the output in Component 1. To better distinguish the contents of components from each other, it might be preferable to shift this output to Component one, and make Component 3 solely a component of capacity building on good practices and their promotion, or at any rate separate the two or three issues.

Output 3.3: The formulation would rather refer to a scaling-up of best practices within the project, but what is meant here instead is the promotion of scaling-up and replicating best practices for climate change adaptation. The component should therefore be rephrased to *“A public relation and awareness raising programme on climate change and best practices for adaptation is put into place.”*

Support to eco-schools and kindergarten is not mentioned as an activity or output, and it is suggested to put it under an extra outcome on awareness raising together with activities 3.3.

Indicators:

It seems that indicators here are widely repetitive of indicators under Output 1, a problem which would be solved by shifting the repetitive output with all its related indicators to output 1. The indicators

“Amount of annual government spending to support application of EbA principles and practices nationally

and: “Number of National Climate Change Authority EbA policy documents mainstreaming EbA within sectoral decision-making frameworks”

Are in their nature impact indicators and therefore do not justify an own outcome area.

Targets

2.2. The project activities have not reduced water extraction of existing irrigation systems, but introduced new irrigation systems, where water use efficiency is increased.

¹ Indicators, baseline and targets not compatible, as water use

Annex II: Progress towards project Outputs (Source: Annual EbA Report 2014, adapted by Evaluators)¹¹

Project Output:										
Indicator(s):	Baseline:				Target(s):	Achievement(s):				Target fulfilled
Mean annual in-stream summer 30-day base flow maintained (not decreased) in two project sites ¹²	2012 year -	Turgen River	Kharkhiraa River	Ulz River	Kharkhiraa River: 2.43 m ³ /sec Turgen River: 1.98 m ³ /sec Ulz River: 0.10 m ³ /sec (at Chuluunkhoro)	2013 year -				
						Turgen River	Kharkhiraa River	Ulz River		No, situation worse than baseline ¹³
						1.57 m ³ /s	4.4 m ³ /s	0 m ³ /s		Situation worse
	Summer minimum flow, m ³ /s	1.67 m ³ /s	4.53 m ³ /s	0 m ³ /s		2014 year - Mean annual in-stream summer not yet calculated. Discharge:				
						discharge: 1.44 m ³ /s	discharge: 1.44 m ³ /s	discharge: 1.49 m ³ /s		Situation improved for Ulz
Ground and surface water quality improved or maintained in two project sites ¹⁴	Water chemical analysis - 2012	Turgen	Kharkhiraa	Ulz	5% improvement on average ¹⁵	Water chemical analysis - 2014¹⁶	Turgen	Kharkhiraa	Ulz	% Target fulfilled
	Suspended solids (mg/l), MNS4586:1998 35mg/l	16	40	8.5		Suspended solids (mg/l), MNS4586:1998 35mg/l	6	4	6.4	In all cases overfulfilled
	Permanganate COD (mg/l) MNS4586:1998 10mg/l	1.4	7	5.28		Permanganate COD (mg/l) MNS4586:1998 10mg/l	7.3	0.5	10.6	Not fulfilled for Turgen and Ulz, overfulfilled for Kharkhiraa
	NH ₄ (mg/l) MNS4586:1998 0.5mg/l	0.42	0.54	0.083		NH ₄ (mg/l) MNS4586:1998 0.5mg/l	0.21	0.09	0.13	Overfulfilled in Turgen and Kharkhiraa, not fulfilled in Ulz
	Total mineral P (mg/l) MNS4586:1998 0.2mg/l	0.34	0.45	0.79		Total mineral P (mg/l) MNS4586:1998 0.2mg/l	0.017	0.067	0.004	Overfulfilled everywhere
	Total Fe (mg/l) MNS4586:1998 0.1mg/l	0.23	0.14	0		Total Fe (mg/l) MNS4586:1998 0.1mg/l	0.07	0.03	0.06	Overfulfilled in Turgen and Kharkhiraa, not fulfilled in Ulz

¹¹Outputs are short-term development results produced by project activities. They must be achieved with the resources provided and within the time-frame specified.

¹² In-stream base flow is a portion of stream flow that comes from the deep subsurface flow and delayed shallow subsurface flow during the summer (un-frozen) period.

¹³ The indicators are not feasible, therefore, not fulfilling them does not mean that project did not perform. (compare also recommendations)

¹⁴ (PIU): The figures are July figures which are considered most representative. Missing data will be determined during Project Year One with Output 2.1 activity.

¹⁵ Target unusual. Normally compared with standard values, which is targeted, not a general targeted percentage.

¹⁶ Evaluation: The variation of these figures is very high. It has to be made sure, that data are statistically significant.

The project also monitors and reports on biological water indicators, soil indicators, and glacier and snow depth. But these are not related to project targets.

Project Output I:				% of Target Fulfilled
1. Number of integrated strategies/management plans for river basins approved and adopted by National and Aimag Governments ¹⁷	Operational integrated strategies/management plans for river basins(or sub-basins): 0	Operational integrated strategies/management plans for river basins: at least 2	One IWRM plan adopted by all 3 target Aimags (and implementation initiated from the 2015. Seventeen EbA programs developed for each target soum in Kharkhiraa-Turgen and Ulz river basins and endorsed to 17 soum's Parliament.	More than 100%
2. Number of Aimag governments monitoring, assessing, and reporting to MEGD and relevant agencies (water authority, National Climate Change Coordination Office) on integrated river basin management measures	Number of Aimag Governments implementing integrated strategies/management plans for river basins: 0	Number of Aimag Governments implementing integrated strategies/management plans for river basins:at least 3	Two Ulz RBA and Uvs lake – RBA Three Meteorology offices of Dornod, Uvs and Khentii aimag Five Governor's Offices of Dornod, Uvs, Khentii, Zavkhan and Khuvsgul aimag	More than 100%
3. Guidelines on IWRM address climate risks (and integrate adaptation measures and EbA approaches)	Current guidelines do not address adaptation and EbA issues explicitly	Guidelines for IWRM address climate risks	Guidelines for IWRM address climate risks and landscape level Soum EbA Plans are also in support of the implementation of IWRM plans for RBs.	More than 100%
4. Total hectares included within protected areas system in the two project sites	Altai Mountains / GLB: 37,420 km ² Kharkhiraa/Turgen watershed: 800 km ² Eastern Steppe: 42,676 km ² Ulz watershed: 3,120 km ²	Altai Mountains / GLB: 39,420 km ² Kharkhiraa/Turgen watershed: 1,000 km ² Eastern Steppe: 44,676 km ² Ulz watershed: 3,750 km ²	Good progress has been made in enlarging the network of protected areas: 2014 The protected area has increased almost of 6,000 km ² (600,000 hectares). It's 13% of Ulz, Kharkhiraa-Turgen river basins area.	Fulfilment rate about 7%. Not fulfilled

Project Output II:				
Indicator(s):	Baseline:	Target(s):	Achievement(s):	Rate of Fulfilment
2.1 Number of Soums in target area considering EbA measures/Integrated River Basin Management into their annual land-use planning and in Soum development plans and strategies.	Baseline :0	17	17 soums	100% Target fulfilled

¹⁷ (PIU Comment:) By project close, the National Government and each Aimag within the Altai/GLB and Eastern Steppe landscapes will have adopted the EbA strategic process as formal policy

2.2 Water use efficiency improved to maintain ecosystem integrity as measured by:	Kharkhiraa/Turgen River basin:0 Ulz River basin:0	Total extraction approx. 20% decreased		Not measurable ¹⁸
2.2.1 Amount of surface water extracted for irrigation in project sites (cubic meter) 2.2.2 Number of monitored wells increasing ground-water consumption efficiency in project sites ¹⁹	Kharkhiraa/Turgen River basin:0 Ulz river basin:0	12 70	In 2014, a total of 6 wells were repaired. The project is intending to equip established boreholes with relevant measuring devices and train local hydrological officers.	Less than 10%
2.2.3 Small scale Rain and snow melt Water harvesting	No water harvesting activities:0	Number of small scale water harvesting reservoirs: 2	Based on these, 2 simple water harvesting structure were constructed in Turgun soum.	100%
Land use practices and climate change resilience improved as indicated by: 2.3.1 Total hectares of riparian and wetland habitat restored with native vegetation within project sites	Kharkhiraa/Turgen River basin: 0 Ulz River basin: 0	1250 ha ²⁰ 2250 ha	Small scale tree nurseries in Kharkhiraa, Turgun and Ulz river basins covering 10 ha of riparian area. In 2014, a total of 5 hectares of area have been rehabilitated along the river Ulz and Kharkhiraa	Less than 1%. Not fulfilled
2.3.2 Springs protected with livestock exclosures, Livestock watering and access to creeks managed with appropriate facilities/fencing	Kharkhiraa/Turgen River basin:0 Ulz river basin: 0	Kharkhiraa/Turgen: 12 Ulz: 70 (about 30% increase)	A total of 12 springs were protected in 2014 applying. As a result, a total of 117.000 hectares ²¹ of pasture land were supplied with required water resources. The protected springs have been providing more than 500 rural populations as well as 69.500 livestock with drinking water.	100%
2.3.3 Total area with improved pasture land management	Kharkhiraa/Turgen River basin:0 Ulz river basin:0	1,500 km2 12,000km2	. 117 000 ha?	More than 100%
2.3.4 Areas with Reforestation and improved forest management in Western target areas	226 ha	Western target areas: 236 ha (approx. 10% increase)	254 ha.	More than 100%\$
2.4 Decrease in average Rural Poverty rate for 17 Soums within the target watersheds.	Current poverty rate: Kharkhiraa/Turgen basin: 0.495 Average Poverty headcount for Ulz basin: 0.433	Approx. 10% average decrease	Not measured	Not to be measured during MTR
2.5 Number of Small Enterprises established and operating successfully	Kharkhiraa/Turgen River basin:312 Ulz River basin:237	570 Small Enterprises at both project sites (appr. 5% ²² increase).	558	Fulfillment less than 50%

¹⁸ The project activities have not reduced water extraction of existing irrigation systems, but introduced new irrigation systems, where water use efficiency is increased

¹⁹ Indicators, baseline and targets not compatible

²⁰ The total area of 1250 is smaller than the sum of 3.1. and 3.3.

²¹ It is not clear, how the figures were calculated

²² Target is not 5% increase, but 3.8% increase

	549			
2.6 Hydrological monitoring is strengthened	Monitoring posts for glacial run-off in Western project area:0 Kharkhiraa/Turgen River basin:0 Ulz river basin:0	At least 1 in Western target area; at least 2 surface water monitoring post in Eastern target area	One Glacier Observation Post was established in Turgen Mountains. In total, 3 surface water monitoring posts (1 in Kharkhiraaa, the west, 2 in Ulz, eastern target area) newly established with support of the project in addition to existing ones (in the west 3, in the east 3) in 2013.	100%

Project Output III: Strengthening Capacities/Institutions to support EbA strategies and integrated river basin management, their replication and mainstreaming in sector policies				
Indicator(s):	Baseline:	Target(s):	Achievement(s):	% of Target fulfilment
6. River Basin Councils and sub-councils established and strengthened in target areas	River Basin Councils established and strengthened in target areas: 0	River Basin Councils established and strengthened in target areas: at least 3	More than 3	100%
7. Number of staffs of relevant agencies and local governments trained in river basin management guidelines	Number of staff of relevant agencies and local governments trained in river basin management guidelines: 0	Number of staff of relevant agencies and local governments trained in river basin management guidelines: at least staff of relevant agencies in 21 Aimags , and members of existing river basin councils, and staff of newly established river basin administration	110	More than 100%
8. Number of Soums replicating EbA measures and integrated river basin management principles and practices within the target eco-regions	Total Soums involved in integrated river basin management: 5	Total Soums implementing and replicating integrated river basin management :at least 20	Some EbA measures were initiated& implemented in 17 target soums and reflected in IWRM Plans of 2 target river basins & Strategic priorities to implement EbA measures for 2 target eco regions developed and officially approved in 2013-2014.	85%

<p>9. National mainstreaming of EbA as indicated by:</p> <ul style="list-style-type: none"> Number of official government policy documents adopting EbA principles/practices 	<p>Number of sector policy documents revised and amended to consider mainstreaming EbA, landscape level integrated water resources and land-use management: less than 5</p>	<p>Number of sector policy documents revised and amended to consider mainstreaming EbA, landscape level integrated water resources and land-use management: considering priority actions, at least 7 (including pasture, agriculture)</p>	<p>The main EbA policy-Strategic priorities to implement EbA measures for 2 target eco regions was referenced to National MARCC policy document developed in 2014.</p> <p>Moreover the published EbA policy document was distributed to participants of National workshop of soum Governors held in 30 October, 2014 in the Parliament House of Mongolia.</p>	<p>Less than 30%</p>
<ul style="list-style-type: none"> Amount of annual government spending to support application of EbA principles and practices nationally 	<p>Total national annual investment in EbA: \$ 0</p>	<p>Total national annual investment in EbA: \$ 100,000</p>	<p>The target aimag and soums committed a total of USD 3.3 million (2.8 for Ulz, 0.5 in Kharkhiraa/Turgen) for implementation of EbA pilot measures reflected in the IWRM Plans. These amounts constitute 2.8% and 19.1% of the total proposed budget of IWRM Plans for Kharkhiraa, Turgen sub-river basin and Ulz river basin respectively.</p>	<p>More than 100%</p>
<ul style="list-style-type: none"> Number of National Climate Change Authority EbA policy documents mainstreaming EbA within sectoral decision-making frameworks. 	<p>Number of National Climate Change Authority Policy Documents: 0</p> <p>(2 documents (National Programme and Action Plan on Climate Change) exist, but do not explicitly address EbA (in this terminology)</p>	<p>Number of National Climate Change Authority Policy Documents (Adaptation Strategies) at least 3</p>	<p>Three series of national workshops to discuss the draft National Climate Change Adaptation program for Agriculture, Water resource& Forest sector was held in 2014 co-organized with CCCO and PIU with the involvement of key decision makers& experts of 3 development sectors above. During the workshops, the NPC& all 3 experts of PIU gave their comments to reflect EbA concepts& measures into the programmes. Also the main EbA policy-Strategic priorities to implement EbA measures for 2 target eco regions was delivered to the workshop participants.</p>	<p>0</p>

Annex III. Methodology:

Evaluative Matrix Template

Evaluative Questions	Indicators	Sources	Methodology
Project Strategy: To what extent is the project strategy relevant to country priorities, country ownership, and the best route towards expected results?			
(include evaluative question(s))	(i.e. relationships established, level of coherence between project design and implementation approach, specific activities conducted, quality of risk mitigation strategies, etc.)	(i.e. project documents, national policies or strategies, websites, project staff, project partners, data collected throughout the MTR mission, etc.)	(i.e. document analysis, data analysis, interviews with project staff, interviews with stakeholders, etc.)
Which are the major country priorities with respect to climate change adaptation)	Coherence between strategies described in documents with strategies reported by Project reports, Project staff and stakeholders	Project Document National Climate Change Adaptation Policy Board Meeting Reports Interviews with Line Ministries	Document analysis Analysis of codified Interviews with Line Ministries and project staff
How consultative was process of project development and how was ownership arranged	Stakeholder involvement in project development Partnerships and User Groups, policy frameworks which incorporate project objectives and outcomes	Project Document Inception Report Interviews with Project Staff and Focus group interviews with stakeholders	Document Analysis Analysis of Interviews with Project Staff and Focus group interviews
Which barriers have been identified to climate resilience, have strategies been appropriate to overcome these barriers	Generic assessment of coherence between strategies undertaken and barriers addressed	Project Reports UNEP EBA Strategy)	Document analysis Focus Group Interviews Coherence analysis between identified barriers with strategies undertaken (Outcome analysis)
Have risks been appropriately addressed	Sustainability analysis Risk analysis	Project Document Project Reports	Comparison of risk and sustainability analysis in documents with outcomes from Expert and Focus Group Interviews
Progress Towards Results: To what extent have the expected outcomes and objectives of the project been achieved thus far?			
Which are the major outcomes and objectives of the project?	Indicators used as highlighted in logframe	Project Progress Report Logframe M&E Framework	Analysis of Logframe Analysis of M&E Framework Focus Group Interviews Indicator Analysis
How much of outcomes and objectives have been realized so far?	As above	Project Progress Report Logframe M&E Framework Results from Focus Group and Expert Interviews	Comparison of reported targets and outcomes with achieved ones from project documents triangulated with outcomes from Expert Interviews Field Observations
Which is the percentage of what has been achieved in comparison what has to be achieved at the end	%	Project Progress Reports	Calculation of the outcomes of the above outputs
Project Implementation and Adaptive Management: Has the project been implemented efficiently, cost-effectively, and been able to adapt to any changing conditions thus far? To what extent are project-level monitoring and evaluation systems, reporting, and project communications supporting the project's implementation?			
Has the project been implemented efficiently, cost-effectively	Outputs / financial inputs	Financial project report	Financial Analysis, generic comparison with output/input in similar projects
Has the Project been able to adapt to any changing conditions thus far	List of changing conditions Number and type of adaptation measures by the project	Project Reports, Project Staff and stakeholder interviews	Comparison of project reports with results from interviews

To what extent are project-level monitoring and evaluation systems, reporting, and project communications supporting the project's implementation?	Coherence of M&E framework and communication with Project's implementation	M&E Framework, stakeholder interviews on communication, observations, analysis of project communication samples	Coherence analysis
Sustainability: To what extent are there financial, institutional, socio-economic, and/or environmental risks to sustaining long-term project results?			
Will stakeholders have the capacity to accrue the financial resources to achieve outcomes after the end of the project	Financial resources committed already now General financial commitment of stakeholders now Assessed financial resources generated during project lifetime	Stakeholder interviews Project staff interviews Project annual reports Project Progress Reports	Document Analysis Analysis of Interviews
Will environmental flows and services be strengthened in a way that they will not lose their capacities after the end of the project	Environmental flows strengthened by the project Expected status of environmental health, stocks and flows at the end of the project		Analysis of indicators which measure improvement of environmental flows and services
Do institutions have made the sufficient changes / adaptations to be able and willing to maintain project outcomes	Willingness and capacities of institutions at the stage of the MTR Commitment of Institutions to maintain or improve status quo at MTR Status of mainstreamed Climate risks into legislation, local and national frameworks		Capacity analysis of institutions, analysis of commitments based on indicators, number and type of policies mainstreamed into frameworks and legislation
Are there social or political risks which would endanger sustainability	Status of external threats to social sustainability		SWOT Analysis of project interventions with respect to social sustainability Analysis of external risks in the perception of stakeholders

Questionnaire for Analysis of Financial Risks

- Was understanding of climate change risk and enhanced GOM budget enough motivation for policy makers to prioritize climate resilience over non-sustainable short-term economic benefits
- Are non-climatic drivers for ecosystem alteration sufficiently addressed by project? Review of strategic environmental assessment, landscape level ecosystem adaptation plan, regulatory and financial management techniques in their efficiency and effectiveness to inform other ecosystem management initiatives or incentives for reducing non-climatic threats to ecosystems. Assessing impacts of capacity building on the reduction of non-climatic drivers
- Level and frequency of natural disasters and their impact on communities' confidence in climate adaptation: have project measures reduced vulnerability of natural disasters in particular of herders' communities= Are current successes in climate adaptation sufficient to build incentives for further CCA
- Are adaptation measures gender sensitive and do they close inequality gaps?
- Do local capacities match demands? Assess the project capacity building strategy and its impacts.

Other issues to be assessed

- Quality and effectiveness of environmental strategy,
- Ecosystem management capacities on Aimag and Soum levels. Which specific guidance tools have been provided for ecosystem management planning.
- Integration of sectoral decision making, information quality.
- Capacities of government and decision makers to identify, assess climate risks, and mainstream them into water, land and resource management.
- Diagnosis of climate resilience of communities – as well as its progress- Ingredients of resilience.
- Holistic management approaches that embrace climate risks
-

Analysis of Efficiency:

- Comparing time and budget resources used for sustainable technologies with Best Practices Documentation tbd and Baseline documents listed in the ProDoc.
- Comparing time and budget resources for all other activities with baseline documents
- Comparing timeline of activities as reported in the Quarterly Project Reports with Workplan in ProDoc.

Participatory Evaluation

Interview and Focus group discussion:

-6 focus group meetings were organized involving **42** local people including *soum* and *aimag* level authorities, local coordinators, land officers, LS experts, Pasture management experts, Environmental Inspectors, RBA and herders, vegetable growers etc

- Focus group discussions using participatory tools: H-Form -evaluate current activities, determine current efforts (on a scale of 0-10), "negative" reasons (why the score is as low as it is) "positive" reasons (why the score is high as it is) identify activities/solutions to bring the score to 10.

Result of Participatory Evaluation

СӨРӨГ ШАЛТГААН	Танай суманд төсөл хэрэгжиж эхэлснээс хойш усны мониторинг хэр сайжирч байна вэ?	ЭЕРЭГ ШАЛТГААН
- Усны мониторинг хийх багам тухар -Өмн дутмаг. - Нянгийн хүчин - Лгээ хийх үед нэн илэрсэн тохчиололд у-г шалтгаан тодор.гаа-	0 — 5 — 10 Тарах арта зам - Сумын төвөөс 5км орших хэмжээний цэг дээр каруулын байр барих - Эко клубын сурал - Гдаад усны шавын амьтдаар тохирдол тод сургалт явуулах. - Тодоргийн болон түүнээ усны тоолуурнуулах.	- Усны мониторинг хийх зорилгоор Тээлийн боомд ул цооног шинээр байгуулсан - Суманд ошигла байгаа худагуу, улирал бүр нян шинэжлэгээ хийх - Усны температур хэмжих багамыг цэцэрлэг, Т.Г-н Зууханд суурь - лсан.

Questions:

- How well the herder communities are working together for better water resource use and for better pasture management since project has started? (Score 5-6)
- How is the progress in water monitoring in your local area since the project has started? (Score 5)
- How well the local related stakeholders are cooperating for better implementation of IWRM since the project has started? (Score 8)

Negative reasons	How well the herder communities are working together for better water resource use and better pasture management since project has started?	Positive reasons
	0 6 10	
<p>-The self initiation by the communities are weak</p> <p>-Some community groups are weak: the participation level of all members are not same</p>	<p>Potential solutions:</p> <p>-The community leaders should obtain leadership skill and management through attending different trainings</p> <p>-Organize in-country experience sharing visits for communities to learn from other communities</p> <p>-Public awareness activities need to be organized to disseminate the community activities in local area</p>	<p>-Community groups have extended their activities by establishing cooperative</p> <p>-Community members work together voluntarily to fence the upstream area of the local river</p> <p>-Communities able to do OTOR due to fixing the old broken engineered well and could able to use the abandoned pasture decreasing the pressure near river basin</p>

Negative reasons	How is the progress in water monitoring in your local area since the project has started?	Positive reasons
	0 5 10	
<p>-Local drinking water contains heavy metals which could cause health problems</p> <p>-Surface water resource has decreased due to the concentration of households and livestock in particular area</p> <p>-Without monitoring and inspection interventions, local households dig wells on their own</p> <p>-Lack of capacity to identify the cause of water pollution locally</p>	<p>Potential solutions:</p> <p>-water purifying equipment should be installed locally</p> <p>-Ground water monitoring need to be done</p> <p>-Identify protection zones along the river basin and create/build posts</p>	<p>-Local government officers and the community representatives attended in the training on efficient use of water resources and obtained practical knowledge</p> <p>-Local school students start doing monitoring on water pollution using the equipment given by the project (pH etc)</p> <p>- The water monitoring equipment was given by the project</p> <p>-Water temperature meter was installed in kindergarten</p>

Negative reasons	How well the local related stakeholders are cooperating for better implementation of IWRM since the project has started?	Positive reasons
	<div> <div>0</div> <div>8</div> <div>10</div> </div>	
-Due to their own work duties all stakeholders could not meet regularly -Lack of finance to organize workshop and meetings locally	Potential solutions: -Increase the participation of local communities in planning and implementation of better water resource use -RB counsel in 2 RBA need to be strengthened	-Water users association has been established after the dispute resolution meetings -IWRM plan was developed and approved -Soums are agreed to use the water according to the schedule created by the vegetable growers -All the related stakeholders attend the trainings from the project

Annex IV: Literature

EBA 2012: Inception Report

EBA 2012: Annual Progress Report 2012

EBA 2013: Annual Progress Report 2013

EBA 2014: Annual Progress Report (2014): Draft Report

EBA 2012: Annual Workplan 2012

EBA 2013: Annual Workplan 2013

EBA 2014: Annual Workplan 2014

EBA 2012: Minutes of First Project Board Meeting 2012

EBA 2013: Minutes of Second Project Board Meeting 2013

EBA 2013: Minutes of Third Project Board Meeting 2013

EBA 2013: Minutes Fourth Project Board Meeting 2014

UNDP 2011: Approved Project Document

UNDP 2012: Project Site Location Maps

Supporting Literature

ADB, GoM, MEGD (2014): Making Grasslands Sustainable in Mongolia. Herders' Livelihoods and Climate Change. Ecosystem Based Adaptation approach to Maintaining Water Security in Critical Water Catchments in Mongolia" Project, MON/12/301

MNET, UNDP, UNEP (2009): Mongolia: Assessment Report on Climate Change 2009.
http://www.unep.org/pdf/MARCC2009_BOOK.pdf

Retzer V, Reudenbach C (2005) Modelling the carrying capacity and coexistence of pika and livestock in the mountain steppe of the South Gobi, Mongolia. Ecological Modelling 189 (1-2): 89 - 104

Travers A, Elrick C, Kay R, and O. Vestergaard (2012): Ecosystem-Based Adaptation Guidance. Moving Principles to Practice. Working Document: April 2012

Water Aid 2013: Protection of Springs. Technical Brief.

Annex V: Spring Water Protection Scheme. Source: WaterAid 2013

Technical brief

Protection of spring sources

Stages in the protection of a spring

The following three diagrams illustrate the stages in the construction of a collecting chamber.

Stage one:

- Clear vegetation above the head of the spring
- Build a cut-off drain to divert surface water
- Divert the spring water temporarily to allow construction of the collection chamber

Stage two:

- Place large stones above the head of the spring
- Construct the collection chamber

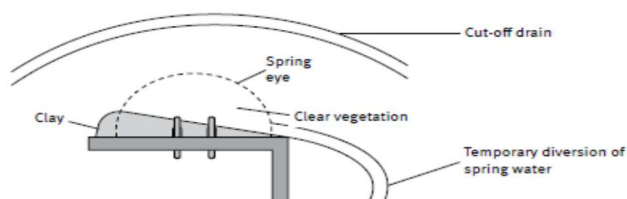
Stage three:

- Further protection of the spring head by layers of impervious material above it

Fig 2: Stages of spring protection

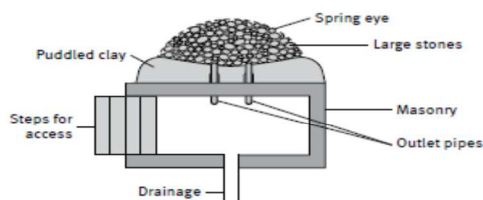
Stage one

Plan view

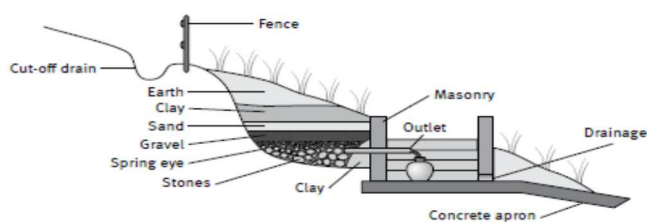


Stage two

Plan view



Stage three



Technical brief 3

Annex VI: List of interview for project stakeholder Meeting in Ulaanbaatar city

Nº	Participant's name	Position /Organization	Contact
Ministry of Environment and Green Development(MEGD)			
1.	B.Tulga	Vice minister of Ministry of Environment and Green Development (MEGD), Chairman of Project Board	266286
2.	D. Dagvadorj	Special Envoy for Climate Change, Chairman of Climate Change Coordination Office (CCCO), MEGD, NPD	311173, 99246722
3.	G. Ganbat	Director, Division of River Basin Management, MEGD	267545, 99113264
4.	B.Uyanga	Officer, Foreign Relations Department, MEGD	88016808

5.	Ts.Battsetseg	Officer of CCCO, MEGD	311086
6.	M.Davaanyam	Officer, Division of River Basin Management, Department of Policy implementation, MEGD	99007860
7.	Z.Batjargal	Project senior consultant	99086786
Ministry of Industry and Agriculture			
8.	Esun-Erdem	Officer, Crop Production Policy Implementation Department, Ministry of Industry and Agriculture	263408 261687
9.	Sh.Baranchuluun	Former Project Board Member, Former senior officer of Irrigated crop production policy implementation coordination department, Ministry of Industry and Agriculture	99043656
Land Affairs and Urban Development Office			
10.	N.Munkhuu	Senior officer, Land Affairs and Urban Development Office, Administration of Land Affairs, Construction, Geodesy and Cartography	99030152
Ministry of Economic Development			
11.	D. Erdenebayar	Director, Department of Sectoral Development Policy Coordination, Ministry of Economic Development	266303
National Agency for Meteorology, Hydrology and Environment Monitoring			
12.	D.Batkhuu	Officer responsible for Hydrology, Division of technology, information and marketing	99283747
13.	J.Batbayar	Director, Environmental Monitoring Division	99022641 96650597
Institute of Meteorology and Hydrology			
14.	G.Davaa	Head of Hydrology sector, Institute of Hydrology and Meteorology	99851585
15.	G.Gunjidmaa	Head of Research and Information department, Press institute of Mongolia	88008787
State university of Education			
16.	B.Munkhtsog	Mammalian study Laboratory , Institute of Biology	99032176
17.	Y.Batchuluun	Lecturer of Geography Department, State University of Education, Member of Project technical committee	99091640
Water Services Regulatory Commission of Mongolia			
18.	J.Gerelchuluun	Director, Price and tariff department, Water Services Regulatory Commission of Mongolia	99991219
International organizations			
19.	B.Onon	Officer, Wildlife conservation society, Mongolia	99157064
20.	Bandi	Officer, WWF	
21.	Sh.Boldbaatar	Project national consultant, Disaster risk management consultant, World Bank	312647

Schedule for interviews with project stakeholder Meeting in Ulaanbaatar city

Meeting date	Time	Participants	Position/ Organization
Ministry of Environment and Green Development(MEGD)			
	10 am	G.Ganbat	Director, Division of River Basin Management, MEGD

December 5	11 am	M.Davaanyam	Officer, Division of River Basin Management, Department of Policy implementation, MEGD
	2 pm	B.Tulga	Vice minister of Ministry of Environment and Green Development (MEGD), Chairman of Project Board
	4 pm	B.Uyanga	Officer, Foreign relations department
	5 pm	Z.Batjargal	Project senior consultant
Stakeholders, academic institutes and international organizations			
December 12	10 am	G.Davaa	Head of Hydrology sector, Institute of Hydrology and Meteorology
	11 am	D.Togtokhbayar	Head of Uvs lake-Tes river basin administration
	2 pm	G.Gunjidmaa	Head of Research and Information department, Press institute of Mongolia
	3 pm	J.Gerelchuluun	Director, Price and tariff department, Water Services Regulatory Commission of Mongolia
	4 pm	Sh.Baranchuluun	Former Project Board Member, Former senior officer of Irrigated crop production policy implementation coordination department, Ministry of Industry and Agriculture
December 17	10 am	Esun-Erdem	Officer, Crop Production Policy Implementation Department, Ministry of Industry and Agriculture
	11 am	N.Munkhuu	Senior officer, Land Affairs and Urban Development Office, Administration of Land Affairs, Construction, Geodesy and Cartography
	1 pm	J.Batbayar / Enkhmaa/	Director, Environmental Monitoring Division,
	2 pm	D.Batkhuu	Officer responsible for Hydrology, Division of technology, information and marketing
	3 pm	B.Munkhtsog	Mammalian study Laboratory , Institute of Biology
	4 pm	Bandi	Officer, WWF
December 18	2 pm	D.Dagvadorj	Special Envoy for Climate Change, Chairman of Climate Change Coordination Office, MEGD, NPD
		Ts.Battsetseg	Officer of CCCO, MEGD

TRIP AGENDA for Mid Term Evaluation

East site: Khentii and Dornod aimags

Objective:

1. Visit target soums in Ulz river basin to get familiar with achievement and impacts of EbA measures made at local level including spring protection, strawberry planting, rehabilitation of degraded riparian area and water saving techniques
2. Meet with soum Governors, local project coordinators and beneficiary adaptation groups and discuss the progresses of on-going and soum specific activities of the project.

Date and duration:

7-11 December, 2014 /4 nights and 5 days/

Route and distance given as in the Map:

Ulaanbaatar city- Choibalsan city, Dornod aimag (700km)- Chuluunkhoroot soum(250km)-Dashbalbar soum(140km)- Bayandun soum(90km)- Khentii aimag center(360km) - Ulaanbaatar city (334km)

Mission team composition:

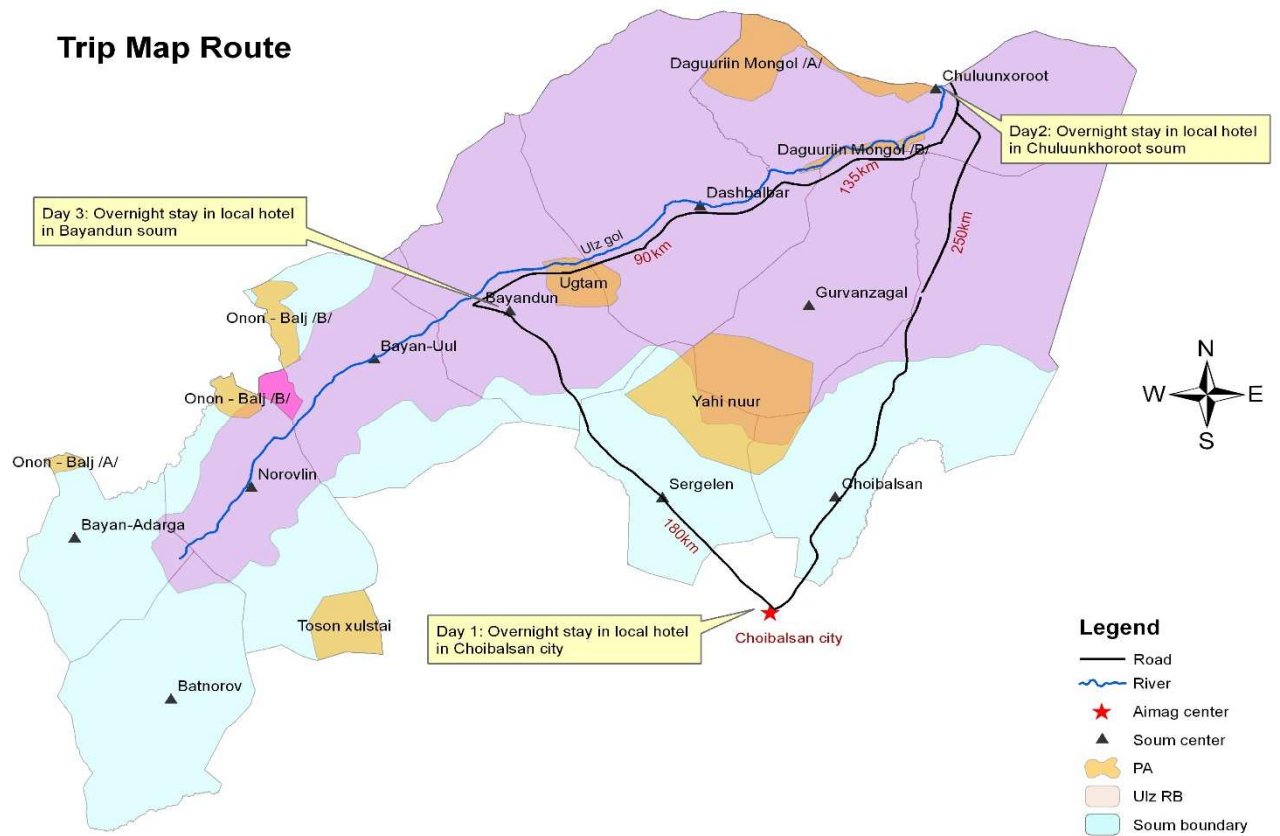
1. Ms. Ingrid Hartmann, IC of the Mid-Term Review
2. Mr.Ya. Narangerel, NC of the Mid-Term Review
3. Mr. D. Tsognamsrai, CORCDE, EBA project
4. Mr. D. Enkh Amgalan, Driver
5. Mr. D.Tuvshinbayar. Gurvanzagal soum driver

Time	Activity	Specifics	Responsible staff
Day1-07 December			
08.00-18.00	-Leave UB for Choibalsan		Team
19.00	-Arrival in Choibalsan Dinner -Stay overnight in Kherlen hotel, Choibalsan		Mr. N. Khishigjargal, Aimag coordinator
Day2-08 December			
08.30 -12.30	- Meet with aimag coordinator and relevant officials		Mr. N. Khishigjargal, aimag coordinator
13.00	- Lunch		
14.00-19.00	- Leave Choibalsan for Chuluunkhoroot soum - Dinner - Stay overnight in Chuluunkhoroot		Mr.S.Batsaikhan, Chuluunkhoroot soum coordinator
Day3-09 December			
08.30 -13.00	- Meeting with Mr. Z. Gerelt-Od, Soum Governor and other relevant officials to discuss ongoing project activities (refer to appendix 1), - Meet with “Togoruukhan”eco-club members , get familiar with their activities - Visit and meet with “Baga Shar Burd” <u>community group members</u> -Lunch in Chuluunkhoroot soum	-Eco-initiatives -Strawberry planning -Tree nurseries -Establishment of windbreaks -Use of water saving techniques	Team, Mr. Z. Gerelt-Od, Soum Governor Mr. S. Batsaikhan, Chuluunkhoroot soum coordinator
14.00-20.00	Leave Chuluunkhoroot soum for Bayandun soum (230 km), Visit “ <u>Delgerbulag</u> ” <u>spring in</u> Chuluunkhoroot soum (15 km) en route to Dashbalbar soum	-Spring rehabilitation with environmentally sound techniques	Team, Mr. S. Batsaikhan, Chuluunkhoroot soum coordinator

Time	Activity	Specifics	Responsible staff
	<p>Site seeing of Mongol Daurian protected area –“B” section (60km) where running Biodata (biosan) monitoring program,</p> <p>Visit rehabilitated engineered well (50 km to Dashbalbar soum, Tsog-Under en route to Dashbalbar soum</p> <p>Visit “<u>Zuun jaraakhai</u>” spring protection in Dashbalbar soum (40 km) <i>en route</i> to Bayandun soum</p> <p>Arrival and dinner in Bayandun</p> <p>Stay overnight in Bayandun</p>	Rehabilitation of an engineered wells to release habitats of Eastern key species	Ms. M. Ganchimeg, Dashbalbar soum coordinator
Day4-10 December			
8.30-10.00	Meeting with Mr. B. Baatartsogt, Head of Soum Representative Khural and other officials, Visit Ulz gol RBA office, Ms. S. Boldmaa, director RBA		
10.0-13.00	<p>Visit Kindergarden and meet groups</p> <p>Visit “Onkhoodoi” springs (8km)</p> <p>Visit “Naranbulag”</p> <p>Lunch</p>	<p>Eco-initiatives by the teachers and children</p> <p>Spring protected by Ecologically sound techniques</p> <p>Water harvesting site to be constructed in 2015</p>	Team, Ms. N. Otgonzaya, Bayandun soum coordinator
13.00	Leave Bayandun for Khentii		
Day 5-11 December			
09.30-20.00	Leave Khentii for Ulaanbaatar		Team,

Ulaanbaatar	Choibalsan city, Dornod aimag	700 km	Bayandun soum	Chinggis city , Khentii aimag
Choibalsan city	Chuluunkhoroot soum	250 km	Chinggis city , Khentii aimag	Ulaanbaatar
Chuluunkhoroot soum	Bayandun soum	230km	Visiting springs and others	

Trip Map Route



**List of participants for
Local Stakeholder Meeting in Choibalsan city, Chuluun khoroot soum, Dashbalbar soum and Bayandun soum, Dornod aimag**

№	Participant's name	Position /Organization	Contact
<i>Aimag level consultation</i>			
22.	S. Ganbat	Aimag governor	99581881
23.	N.Dugarmaa	Senior officer, Department of Development Policy, Governor's Administration Office	99888186
24.	Sh. Ganbat	Head of Environment, Nature and Tourism Office	99588969
25.	I. Ariyazul	Environmental officer of Department of Development Policy, Governor's Office	93013440
26.	N. Khishigjargal	Director, Director, Hydrology, Meteorology and Environment Office, Project Coordinator of Dornod Aimag	99716089
27.	Kh. Dashdorj	Director, State Protected Area Administration of Dornod	99019697
28.	N. Tuyabold	Senior officer responsible for water policy, Office of Environment	99688592
29.	Kh. Batkhuyag	Officer responsible for natural resource and mining, Office of Environment	
30.	E. Byambjav	Wildlife Officer, Office of Environment	93066138
31.	B. Ganzorig	Officer, Food, Agriculture and Small and Medium Industry Office	88071139
32.	Ts. Nansalmaa	Reforestation and Advocacy Officer, Office of Environment	99248696
<i>Soum level consultation</i>			
1. Chuluunkhoroot soum			
33.	Z. Gerelt-Od	Soum governor	99589577
34.	Ts.Ganbold	Chairman of soum local parliament	99586036
35.	D. Battulga	Environmental inspector	99073071
36.	Ch. Chimeg-Erdene	Head of Livestock unit	88588008
37.	S. Uugantsetseg	Land officer	89751221
38.	E. Amgaabaatar	Hydrological post	89196076
2. Dashbalbar soum			
39.	J. Yondonjamt	Soum governor	88845646
40.	Z.Zorigtbaatar	Chairman of soum local parliament	88201131

41.	U. Bukhchuluun	Environmental inspector	88609977
42.	B. Baatartsogt	Expert of Livestock unit	88279970
43.	U.Uranbileg	Chief of Dashbalbar station	89999867
44.	M. Ganzorig	Land officer	88589003
3. Bayandun soum			
45.	B. Batjav	Soum governor	997590602
46.	B. Baatartsogt	Chairman of soum local parliament	99065523
47.	B. Batdulam	Head of Livestock unit	99573994
48.	S. Almatnsuvd	Environmental inspector	89465546
49.	B. Otgonzaya	Land officer	95588111
50.	S.Boldmaa	Director, Ulz RBA	95588045

TRIP AGENDA for Mid Term Evaluation

West site: Uvs aimag

Objective:

3. Visit target soums in Kharkhiraa-Turgun river basin for fact finding, seeking evidence of progress and/ or impacts of the project interventions -EbA measures made at local level including spring protection, strawberry planting, rehabilitation of degraded riparian area and water saving techniques.
4. Meet with soum Governors, local project coordinators and beneficiary adaptation groups and discuss the progresses of on-going and soum specific activities of the project.

Date and duration:

13-16 December, 2014 /3 nights and 4 days/

Route and distance:

Ulaanbaatar city- Ulaangom city, Uvs aimag (flight) - Turgen soum (36 km) – Ulaangom city (36km) - Naranbulag soum (100 km) - Tarialan soum (133 km) – Ulaangom city (135) - Ulaanbaatar city (flight)

Mission team composition:

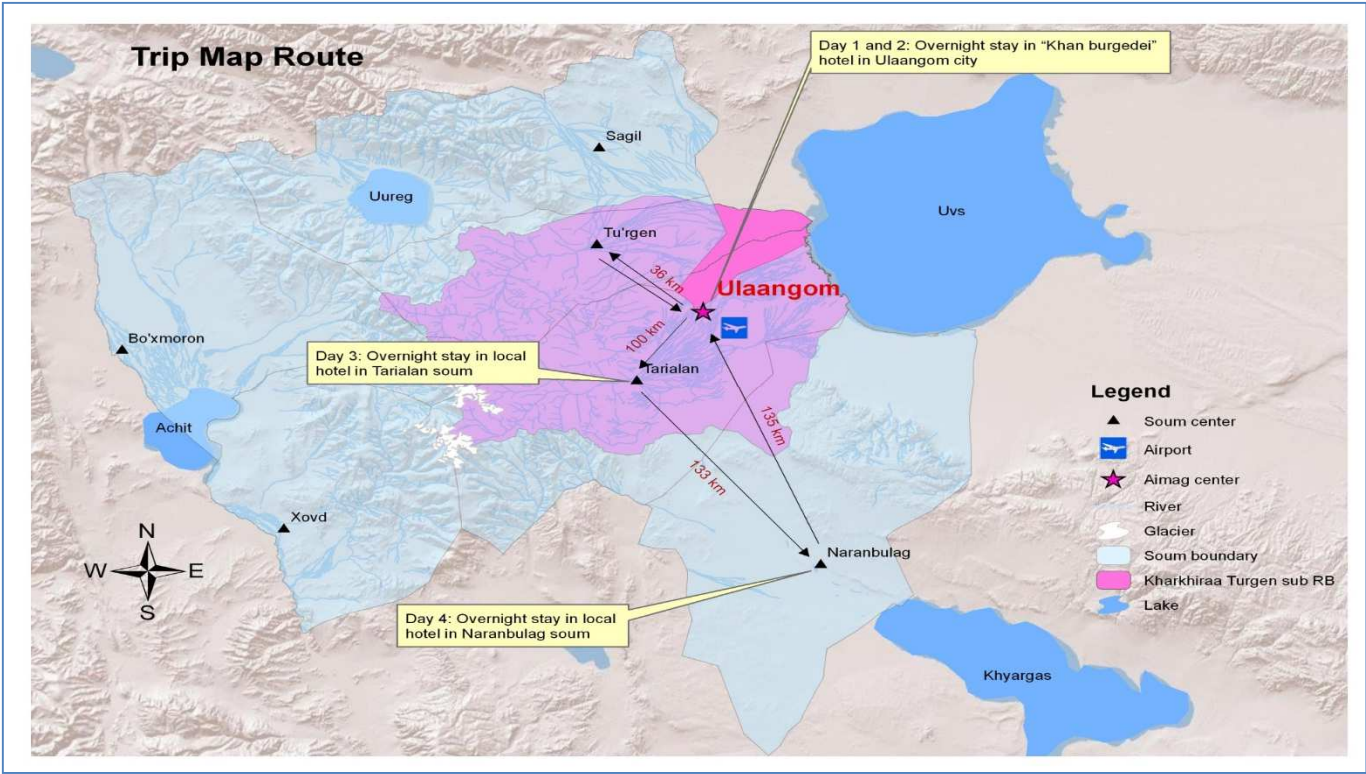
6. Ms.Ingrid Hartman, IC of Mid-Term Review
7. Ms. Y.Narangerel, NC of Mid-Term Review
8. Ms.N.Otgonjargal, NRPE
9. Mr. D.Choijilsuren, Ulaangom soum coordinator.
10. Mr.L.Munkhbat, Turgen soum coordinator
11. Mr.B.Batsukh, Ulaangom soum driver
12. Mr.S.Tsolmontsog, Turgen soum driver

Time	Activity	Specifics	Responsible staff
Day 1-13, December			
14.00-18.00	<p>Depart for Ulaangom city, Uvs aimag (flight)</p> <p>Arrival in Ulaangom city (Ulaangom soum)</p> <p>Meet with Mr. Munkhbat, director of NAMEM of Uvs aimag and relevant engineers to discuss project on-going activities</p> <p>Dinner in Ulaangom city</p> <p>Overnight stay in “Aчит nuur” hotel in Ulaangom city</p>		<p>Team</p> <p>Pickup in airport station of Ulaangom city –</p> <p>Mr. D. Choijilsuren, Ulaangom soum coordinator</p> <p>Mr. L. Munkhbat, Turgen soum coordinator</p> <p>Mr. Munkhbat, director of NAMEM of Uvs aimag</p>
Day2 -14, December			
08.30 - 13.00	<p>Meeting with Mr. O. Gankhuyag, Ulaangom Soum Governor and other officials (refer to appendix 2),</p> <p>Visit and meet with “Chandmani” ecoclub members in Ulaangom</p> <p>Visit and meet with “Khayzgaargyi nairamdal” community group representatives</p> <p>Lunch in Ulaangom city</p>	<p>-Eco initiatives by Ecoschool teachers and students</p> <p>-Strawberry planting</p> <p>-Tree planting</p> <p>-Vegetable seed production</p> <p>-Drip irrigation system</p> <p>-Engineered well equipped with solar display</p>	<p>Team,</p> <p>Mr. O. Gankhuyag, Ulaangom Soum Governor</p> <p>Mr. D. Choijilsuren, Ulaangom soum coordinator</p> <p>Mr. L. Munkhbat, Turgen soum coordinator</p>
14.00-18.00	<p>Leave Ulaangom city for Turgen soum (36km)</p> <p>- Visit traditional small scale rain and snow water harvesting catchment in Turgen soum (place name is Adargan, 27 km) <i>en route</i> to Turgen soum</p> <p>Arrival in Turgen soum</p> <p>Meeting with Mr. E. Byambaa , Soum Governor and other officials,</p> <p>Meet with participants who attended to the wool trainings</p> <p>Arrival and dinner in Ulaangom city</p> <p>Stay overnight in “Khan burgedei” hotel in Ulaangom city</p>	<p>-Simple and cost effective catchment for improving pasture water supply in the local area</p>	<p>Team,</p> <p>Mr. E. Byambaa , Soum Governor</p> <p>Mr. L. Munkhbat, Turgen soum coordinator</p>

Time	Activity	Specifics	Responsible staff
Day-3, 15 December			
08.30 - 13.00	<p>Meet with relevant officers of Governor's office of Uvs aimag</p> <p>Leave Ulaangom soum for Tarialan soum (100 km)</p> <p>Meet with Mr. S. Tsolmon , Soum Governor and other officials to discuss on-going activities of the project</p> <p>Visit "Khan khukhii" community representatives involved in livelihood improvement activities at soum center</p> <p>Lunch in Tarialan soum</p>	<p>-Rehabilitated engineered well for improving pasture management in the area</p> <p>-Wool products , handicrafts</p>	<p>Team, Mr. S. Tsolmon , Soum Governor Mr. D. Choijilsuren, Ulaangom soum coordinator Mr. L. Munkhbat, Turgen soum coordinator</p>
14.00- 18.00	<p>Site visit of Kharkhiraa river (upstream) closest site to see Kharkhiraa river (8km)</p> <p>Leave Tarialan soum for Naranbulag soum</p> <p>Visit and meet with "Mogoiin denj" community group members</p> <p>Meet with Mr. Battulga.Yu, soum governor</p> <p>Narangin spring protected</p> <p>Stay overnight in Naranbulag soum</p>	<p>-Water Users Association</p> <p>-Ethnic group -Vegetable growing -Sprinkle irrigation techniques</p> <p>-Spring protected and rehabilitated with environmental sound techniques</p>	<p>Team, Mr. Uy. Battulga , Soum Governor</p> <p>Mr. D. Choijilsuren, Ulaangom soum coordinator Mr. L. Munkhbat, Turgen soum coordinator</p>
Day 4, 16 December			
08.30- 13.00	<p>Depart to Ulaanbaatar</p>		<p>Team, Mr. D. Choijilsuren, Ulaangom soum coordinator Mr. L. Munkhbat, Turgen soum coordinator</p>
14.00- 18.00	<p>Arrival in Ulaanbaatar city (flight)</p>		<p>Team</p>

Appendix 1

1. Ulaanbaatar -	Ulaangom city	flight	5. Tarialan –	Narabulag soum	133 km
2. Ulaangom -	Turgen soum	36 km + 70 km	6. Naranbulag –	Ulaangom city	135 km
3. Turgen–	Ulaangom city	36 km +70 km	7. Ulaangom -	Ulaanbaatar city	flight
4. Ulaangom-	Tarialan soum	100km	8. Extra		300 km
Total distance:					880 km



Appendix 2 List of participants for Local Stakeholder Meeting in Ulaangom city, Ulaangom soum, Turgen soum, Tarialan soum and Naranbulag soum, Uvs aimag

No	Participant's name	Position /Organization	Contact
Aimag level consultation			
51.	Z. Ganbold	Director, Department of Development Policy, Governor's Administration Office	99459405
52.	B. Ganbold	Head of Environment, Nature and Tourism Office	99255265
53.	D.Munkhbat	Head of Climate Technology, Hydro-Meteorological Department	93071599
54.	M.Ankhubayar	Director, State Protected Area Administration of Uvs lake basin	93094001
55.	U. Murdorj	Senior officer responsible for water policy, Office of Environment, Project Coordinator of Uvs aimag	99459858
56.	B.Enkhtuya	Head of forestry, Environment, Nature and Tourism Office	99459929
57.	D.Batzul	Officer responsible for mining, Governor's Administration Office	93081108
58.	B. Otgoi	Tourism Officer, Division of Social Security, Governor's Administration Office	93019181
59.	S. Gankhuyag	Infrastructure, Division of Social Security, Governor's Administration Office	95454859
Soum level consultation			
4. Ulaangom soum			
60.	O. Gankhuyag	Soum governor	99459745
61.	B.Gombosuren	Deputy of soum governor	99019936
62.	S.Buyandalai	Environmental inspector	99458500
63.	S.Enkhtsetseg	Officer responsible for pasture	88459798
64.	M.Osor	Ranger	93081129
65.	Ts.Uyanga	Land officer	88459266
5. Turgen soum			
66.	E.Byambaa	Soum governor	99458373
67.	R.Udbal	Chairman of soum local parliament	99388601
68.	Sh.Batsukh	Environmental inspector	95867110
69.	S.Gelenkhuu	Head of Livestock unit	88303109
70.	Б.Золзаяа	Land officer	99456597
71.	D.Bandi	Ranger	99771780
6. Tarialan soum			
72.	S.Tsolmon	Soum governor	99453333
73.	D.Jamsran	Chairman of soum local parliament	95891310
74.	Ch.Tsogoo	Environmental inspector	93227669
75.	Z.Tegshjargal	Head of Livestock unit	99455981
76.	D.Tumendemberel	Land officer	99450462
7. Naranbulag soum			
77.	Yu. Battulga	Soum governor	99455185
78.	R.Azbileg	Chairman of soum local parliament	88440063
79.	Ch.Ishtabkhai	Environmental inspector	99940997
80.	O.Tserensonom	Head of Livestock unit	99457610
81.	M.Sosorbaram	Land officer	89456806

Annex VII: Terms of Reference

UNDP-GEF MIDTERM REVIEW - TEAM LEADER

Location :	Ulaanbaatar, MONGOLIA
Application Deadline :	10-Sep-14
Type of Contract :	Individual Contract
Post Level :	International Consultant
Languages Required :	English
Duration of Initial Contract :	10 weeks
Expected Duration of Assignment :	32 work days

1. INTRODUCTION

This is the Terms of Reference (ToR) for the UNDP Midterm Review (MTR) of the full-sized project titled “Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia” (PIMS#4505) implemented through the Ministry of Environment and Green Development, Mongolia (MEGD) /UNDP, which is to be undertaken in 2014. The project started on the November 11, 2011 and is in its third year of implementation. In line with the UNDP-GEF Guidance on MTRs, this MTR process was initiated before the submission of the second Project Implementation Report (PIR). This ToR sets out the expectations for this MTR. The MTR process must follow the guidance outlined in the document *Guidance For Conducting Midterm Reviews of UNDP-Supported, GEF/AF-Financed Projects*.

2. PROJECT BACKGROUND INFORMATION

The project was designed to maintain ecosystem functions and water provisioning services aimed at addressing the needs of critical for survival of rural communities and national economy. The project is implemented at two large landscapes: the Kharkhiraa, Turgen river sub-basin in Altai Mountains and Great Lakes Depression (Altai/GLD) eco region and the Ulz river basin in the Dornod steppe and Mongol Daurian eco region.

Mongolia is highly vulnerable to climate change due to its geographic location, fragile ecosystems and socio-economic conditions. The combination of ongoing land and water degradation multiplied by climate change will almost certainly result in substantial ecological and social challenges. To address the challenges presented by climate change, there is an urgent need to conserve and rehabilitate the ecosystem services upon which Mongolia’s rural economy, traditional culture, and rich biodiversity depend.

The main objective of the project is to maintain the water provisioning services supplied by mountain and steppe ecosystems by internalizing climate change risks within land and water resource management regimes. The project will be implemented between 2012 and 2017. Geographically, the project covers i) the Altai Mountains and Great Lakes Basin Eco-region; ii) the Eastern Steppe Eco-region; focusing on the **Turgen/Kharkhiraa Sub River Basins** – (Turgen, Ulaangom, Sagil, Bukhmurun, Khovd, Tarialan, Naranbulag soums of Uvs Aimag); and **the Ulz River Basin** – (Chuluunkhoroot, Dashbalbar, Bayandun, Bayan-Uul, Gruvanzagal, Choibalsan, Sergelen soums of Dornod aimag; Bayan-Adarga, Batnorov, Norovlin soums of Khentii aimag).

The project has three interconnected components:

- (i) Landscape Level integrated land use and water resources monitoring and planning system focused upon reduction of ecosystem vulnerability to climate change developed and under implementation;
- (ii) Implementing landscape level adaptation techniques to maintain ecosystem integrity and water security under conditions of climate change;
- (iii) Strengthening institutional capacities to support integrated river basin management, its replication and mainstreaming in sector policies;

The breakdown of the project financing is as follows:

No	The project financing	Budget amount US\$
1.	Adaptation fund	5,069,124 US\$

2.	Co-financing UNDP (cash)	500,000 US\$
3.	Co-financing the Government of Mongolia (in kind)	5,000,000 US\$
4.	Total co-financing	10, 569, 124 US\$

Upon the request of the Government of Mongolia, UNDP is the Multilateral Implementing Agency (MIE) for this project. The Project is implemented following UNDP's National Implementation Modality (NIM). The designated Implementing Partner of the project is the Ministry of Environment and Green Development (MEGD). MEGD is responsible for implementing UNFCCC and water resource management and holds the responsibility of the senior supplier. MEGD is ultimately responsible for the timely delivery of inputs and outputs and for coordination of all other Responsible parties including other line ministries, relevant agencies, and local government Authorities. The MEGD appointed the National Project Director, the chair and members of the Project Board (PB), responsible for making management decisions for the project and plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning.

3. OBJECTIVES OF THE MTR

The MTR will assess progress towards the achievement of the project objectives and outcomes as specified in the Project Document, and assess early signs of project success or failure with the goal of identifying the necessary changes to be made in order to set the project on-track to achieve its intended results. The MTR will also review the project's strategy, its risks to sustainability.

4. MTR APPROACH & METHODOLOGY

The MTR must provide evidence based information that is credible, reliable and useful. The MTR team will review all relevant sources of information including documents prepared during the preparation phase (i.e. PIF, UNDP, UNDP Environmental & Social Safeguard Policy, the Project Document, project reports including Annual Project Review/PIRs, project budget revisions, lesson learned reports, national strategic and legal documents, and any other materials that the team considers useful for this evidence-based review). The MTR team will review the baseline Adaptation Monitoring and Assessment Tool submitted to the AF at CEO endorsement, and the midterm Adaptation Monitoring and Assessment Tool that must be completed before the MTR field mission begins.

The MTR team is expected to follow a collaborative and participatory approach²³ ensuring close engagement with the Project Team, government counterparts (the GEF Operational Focal Point), the UNDP Country Office(s), UNDP-GEF Regional Technical Advisers, and other key stakeholders.

Engagement of stakeholders is vital to a successful MTR²⁴. Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to UNDP CO; MEGD, senior officials and task team/ component leaders, key experts and consultants in the subject area, Project NPD, Project Board, NPC, project staff, project stakeholders, academia, local government and CSOs, etc. Additionally, the MTR team is expected to conduct field missions to Mongolia, including the following project sites: the Turgen/Kharkhiraa sub-river basin and Ulz river basin.

The final MTR report should describe the full MTR approach taken and the rationale for the approach making explicit the underlying assumptions, challenges, strengths and weaknesses about the methods and approach of the review.

5. DETAILED SCOPE OF THE MTR

The MTR team will assess the following four categories of project progress. See the *Guidance For Conducting Midterm Reviews of UNDP-Supported, GEF/AF - Financed Projects* for extended descriptions.

i. Project Strategy

Project design:

- Review the problem addressed by the project and the underlying assumptions. Review the effect of any incorrect assumptions or changes to the context to achieving the project results as outlined in the Project Document.

²³ For ideas on innovative and participatory Monitoring and Evaluation strategies and techniques, see [UNDP Discussion Paper: Innovations in Monitoring & Evaluating Results](#), 05 Nov 2013.

²⁴ For more stakeholder engagement in the M&E process, see the [UNDP Handbook on Planning, Monitoring and Evaluating for Development Results](#), Chapter 3, pg. 93.

- Review the relevance of the project strategy and assess whether it provides the most effective route towards expected/intended results. Were lessons from other relevant projects properly incorporated into the project design?
- Review how the project addresses country priorities. Review country ownership. Was the project concept in line with the national sector development priorities and plans of the country (or of participating countries in the case of multi-country projects)?
- Review decision-making processes: were perspectives of those who would be affected by project decisions, those who could affect the outcomes, and those who could contribute information or other resources to the process, taken into account during project design processes?
- Review the extent to which relevant gender issues were raised in the project design. See Annex 9 of *Guidance For Conducting Midterm Reviews of UNDP-Supported, GEF/AF-Financed Projects* for further guidelines.
- If there are major areas of concern, recommend areas for improvement.

Results Framework/Logframe:

- Undertake a critical analysis of the project's logframe indicators and targets, assess how "SMART" the midterm and end-of-project targets are (Specific, Measurable, Attainable, Relevant, Time-bound), and suggest specific amendments/revisions to the targets and indicators as necessary.
- Are the project's objectives and outcomes or components clear, practical, and feasible within its time frame?
- Examine if progress so far has led to, or could in the future catalyse beneficial development effects (i.e. income generation, gender equality and women's empowerment, improved governance etc...) that should be included in the project results framework and monitored on an annual basis.
- Ensure broader development and gender aspects of the project are being monitored effectively. Develop and recommend SMART 'development' indicators, including sex-disaggregated indicators and indicators that capture development benefits.

ii. Progress Towards Results

Progress Towards Outcomes Analysis:

- Review the logframe indicators against progress made towards the end-of-project targets using the Progress Towards Results Matrix and following the *Guidance For Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects*; colour code progress in a "traffic light system" based on the level of progress achieved; assign a rating on progress for each outcome; make recommendations from the areas marked as "Not on target to be achieved" (red).

Table. Progress Towards Results Matrix (Achievement of outcomes against End-of-project Targets)

Project Strategy	Indicator ²⁵	Baseline Level ²⁶	Level in 1 st PIR (self-reported)	Midterm Target ²⁷	End-of-project Target	Midterm Level & Assessment ²⁸	Achievement Rating ²⁹	Justification for Rating
Objective:	Indicator (if applicable):							
Outcome 1:	Indicator 1:							
	Indicator 2:							
Outcome 2:	Indicator 3:							
	Indicator 4:							
	Etc.							
Etc.								

Indicator Assessment Key

Green= Achieved

Yellow= On target to be achieved

Red= Not on target to be achieved

In addition to the progress towards outcomes analysis:

- Compare and analyse the Adaptation Monitoring and Assessment Tool at the Baseline with the one completed right before the Midterm Review.

²⁵Populate with data from the Logframe and scorecards

²⁶Populate with data from the Project Document

²⁷ If available

²⁸Colour code this column only

²⁹Use the 6 point Progress Towards Results Rating Scale: HS, S, MS, MU, U, HU

- Identify remaining barriers to achieving the project objective in the remainder of the project.
- By reviewing the aspects of the project that have already been successful, identify ways in which the project can further expand these benefits.

iii. Project Implementation and Adaptive Management

Management Arrangements:

- Review overall effectiveness of project management as outlined in the Project Document. Have changes been made and are they effective? Are responsibilities and reporting lines clear? Is decision-making transparent and undertaken in a timely manner? Recommend areas for improvement.
- Review the quality of execution of the Executing Agency/Implementing Partner(s) and recommend areas for improvement.
- Review the quality of support provided by the GEF/AF Partner Agency (UNDP) and recommend areas for improvement.

Work Planning:

- Review any delays in project start-up and implementation, identify the causes and examine if they have been resolved.
- Are work-planning processes results-based? If not, suggest ways to re-orientate work planning to focus on results?
- Examine the use of the project's results framework/ logframe as a management tool and review any changes made to it since project start.

Finance and co-finance:

- Consider the financial management of the project, with specific reference to the cost-effectiveness of interventions.
- Review the changes to fund allocations as a result of budget revisions and assess the appropriateness and relevance of such revisions.
- Does the project have the appropriate financial controls, including reporting and planning, that allow management to make informed decisions regarding the budget and allow for timely flow of funds?
- Informed by the co-financing monitoring table to be filled out, provide commentary on co-financing: is co-financing being used strategically to help the objectives of the project? Is the Project Team meeting with all co-financing partners regularly in order to align financing priorities and annual work plans?

Project-level Monitoring and Evaluation Systems:

- Review the monitoring tools currently being used: Do they provide the necessary information? Do they involve key partners? Are they aligned or mainstreamed with national systems? Do they use existing information? Are they efficient? Are they cost-effective? Are additional tools required? How could they be made more participatory and inclusive?
- Examine the financial management of the project monitoring and evaluation budget. Are sufficient resources being allocated to monitoring and evaluation? Are these resources being allocated effectively?

Stakeholder Engagement:

- Project management: Has the project developed and leveraged the necessary and appropriate partnerships with direct and tangential stakeholders?
- Participation and country-driven processes: Do local and national government stakeholders support the objectives of the project? Do they continue to have an active role in project decision-making that supports efficient and effective project implementation?
- Participation and public awareness: To what extent has stakeholder involvement and public awareness contributed to the progress towards achievement of project objectives?

Reporting:

- Assess how adaptive management changes have been reported by the project management and shared with the Project Board.
- Assess how well the Project Team and partners undertake and fulfil GEF/AF reporting requirements (i.e. how have they addressed poorly-rated PIRs, if applicable?)
- Assess how lessons derived from the adaptive management process have been documented, shared with key partners and internalized by partners.

Communications:

- Review internal project communication with stakeholders: Is communication regular and effective? Are there key stakeholders left out of communication? Are there feedback mechanisms when communication is received? Does this communication with stakeholders contribute to their awareness of project outcomes and activities and investment in the sustainability of project results?
- Review external project communication: Are proper means of communication established or being established to express the project progress and intended impact to the public (is there a web presence, for example? Or did the project implement appropriate outreach and public awareness campaigns?)
- For reporting purposes, write one half-page paragraph that summarizes the project's progress towards results in terms of contribution to sustainable development benefits, as well as global environmental benefits.

iv. Sustainability

- Validate whether the risks identified in the Project Document, Annual Project Review/PIRs and the ATLAS Risk Management Module are the most important and whether the risk ratings applied are appropriate and up to date. If not, explain why.
- In addition, assess the following risks to sustainability:

Financial risks to sustainability:

- What is the likelihood of financial and economic resources not being available once the GEF assistance ends (consider potential resources can be from multiple sources, such as the public and private sectors, income generating activities, and other funding that will be adequate financial resources for sustaining project's outcomes)?

Socio-economic risks to sustainability:

- Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long term objectives of the project? Are lessons learned being documented by the Project Team on a continual basis and shared/ transferred to appropriate parties who could learn from the project and potentially replicate and/or scale it in the future?

Institutional Framework and Governance risks to sustainability:

- Do the legal frameworks, policies, governance structures and processes pose risks that may jeopardize sustenance of project benefits? While assessing this parameter, also consider if the required systems/ mechanisms for accountability, transparency, and technical knowledge transfer are in place.

Environmental risks to sustainability:

- Are there any environmental risks that may jeopardize sustenance of project outcomes?

Conclusions & Recommendations

The MTR team will include a section of the report setting out the MTR's evidence-based conclusions, in light of the findings.³⁰

Recommendations should be succinct suggestions for critical intervention that are specific, measurable, achievable, and relevant. A recommendation table should be put in the report's executive summary. See the *Guidance For Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects* for guidance on a recommendation table.

The MTR team should make no more than 15 recommendations total.

Ratings

³⁰ Alternatively, MTR conclusions may be integrated into the body of the report.

The MTR team will include its ratings of the project's results and brief descriptions of the associated achievements in a *MTR Ratings & Achievement Summary Table* in the Executive Summary of the MTR report. See Annex E for ratings scales. No rating on Project Strategy and no overall project rating is required.

Table.MTR Ratings & Achievement Summary Table for (*EbA project*)

Measure	MTR Rating	Achievement Description
Project Strategy	N/A	
Progress Towards Results	Objective Achievement Rating: (rate 6 pt. scale)	
	Outcome 1 Achievement Rating: (rate 6 pt. scale)	
	Outcome 2 Achievement Rating: (rate 6 pt. scale)	
	Outcome 3 Achievement Rating: (rate 6 pt. scale)	
	Etc.	
Project Implementation & Adaptive Management	(rate 6 pt. scale)	
Sustainability	(rate 4 pt. scale)	

6. TIMEFRAME

The total duration of the MTR will be 30 working days within approximately 8 weeks starting September 17, 2014 and ending no later than 10 December 2014. The tentative MTR timeframe is as follows:

TIMEFRAME	ACTIVITY
<i>September 10, 2014</i>	Application closes
<i>September 25, 2014</i>	Select MTR Team
<i>September 25, 2014</i>	Prep the MTR Team (handover of Project Documents)
<i>September 30 (3 days)</i>	Document review and preparing MTR Inception Report
<i>October 7 (4 days)</i>	Finalization and Validation of MTR Inception Report
<i>October 20 (16 days)</i>	Start MTR mission: stakeholder meetings, interviews, field visits
<i>November 4</i>	Mission wrap-up meeting & presentation of initial findings- earliest end of MTR mission
<i>November 22 (6 days)</i>	Preparing draft report
<i>December 4 (3 days)</i>	Incorporating audit trail from feedback on draft report/Finalization of MTR report
<i>December 7</i>	Preparation & Issue of Management Response
<i>December 15</i>	Expected date of full MTR completion

Options for site visits should be provided in the Inception Report.

7. MIDTERM REVIEW DELIVERABLES

#	Deliverable	Description	Timing	Responsibilities
1	MTR Inception Report	MTR team clarifies objectives and methods of Midterm Review	No later than 2 weeks before the MTR mission	MTR team submits to the Commissioning Unit and project management
2	Presentation	Initial Findings	End of MTR mission	MTR Team presents to project management and the Commissioning Unit

3	Draft Final Report	Full report (using guidelines on content outlined in Annex B) with annexes	Within 3 weeks of the MTR mission	Sent to the Commissioning Unit, reviewed by RTA, Project Coordinating Unit, GEF OFP
4	Final Report*	Revised report with audit trail detailing how all received comments have (and have not) been addressed in the final MTR report	Within 1 week of receiving UNDP comments on draft	Sent to the Commissioning Unit

*The final MTR report must be in English. If applicable, the Commissioning Unit may choose to arrange for a translation of the report into a language more widely shared by national stakeholders.

8. MTR ARRANGEMENTS

The principal responsibility for managing this MTR resides with the Commissioning Unit. The Commissioning Unit for this project's MTR is **UNDP Mongolia Country office**.

The commissioning unit will contract the consultants and ensure the timely provision of per diems and travel arrangements within Mongolia for the MTR team. The Project Team will be responsible for liaising with the MTR team to provide all relevant documents, set up stakeholder interviews, and arrange field visits.

9. TEAM COMPOSITION

A team of two independent consultants will conduct the MTR - one team leader (with experience and exposure to projects and evaluations in other regions globally) and one national team expert. The consultants cannot have participated in the project preparation, formulation, and/or implementation (including the writing of the Project Document) and should not have a conflict of interest with project's related activities.

The selection of consultants will be aimed at maximizing the overall "team" qualities in the following areas:

- Recent experience with result-based management evaluation methodologies;
- Experience applying SMART indicators and reconstructing or validating baseline scenarios;
- Competence in adaptive management, as applied to climate change, biodiversity, land and water management;
- Experience working with the GEF or GEF-evaluations;
- Experience working in Central Asia region;
- Work experience in relevant technical areas for at least 10 years;
- Demonstrated understanding of issues related to gender and capacity development; experience in gender sensitive evaluation and analysis.
- Excellent communication skills;
- Demonstrable analytical skills;
- Project evaluation/review experiences within United Nations system will be considered an asset;
- A Master's degree in nature& environment science, management and or other closely related field.

10. PAYMENT MODALITIES AND SPECIFICATIONS

10% of payment upon approval of the final MTR Inception Report
30% upon submission of the draft MTR report
60% upon finalization of the MTR report

11. APPLICATION PROCESS³¹

Recommended Presentation of Proposal:

- a) **Letter of Confirmation of Interest and Availability** using the [template](#)³² provided by UNDP;
- b) **CV and a Personal History Form** ([P11 form](#))³³;
- c) **Brief description of approach to work/technical proposal** of why the individual considers him/herself as the most suitable for the assignment, and a proposed methodology on how they will approach and complete the assignment; (max 1 page)
- d) **Financial Proposal** that indicates the all-inclusive fixed total contract price and all other travel related costs (such as flight ticket, per diem, etc), supported by a breakdown of costs, as per template attached to the Letter of Confirmation of Interest template. If an applicant is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under Reimbursable Loan Agreement (RLA), the applicant must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP.

All application materials should be submitted to the address UN House - 14201, United Nations Street-14, Sukhbaatar district, Ulaanbaatar, Mongolia; Tel: 976-11-327585; in a sealed envelope indicating the following reference “Consultant for Ecosystem-based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia project Midterm Review” or by email at the following address ONLY: bids.mn@undp.org. This email address is being protected from spam bots, you need Javascript enabled to view it by **11.00 a.m., September 10, 2014**. Incomplete applications will be excluded from further consideration.

Criteria for Evaluation of Proposal: Only those applications which are responsive and compliant will be evaluated. Offers will be evaluated according to the Combined Scoring method – where the educational background and experience on similar assignments will be weighted at 70% and the price proposal will weigh as 30% of the total scoring. The applicant receiving the Highest Combined Score that has also accepted UNDP’s General Terms and Conditions will be awarded the contract.

ToR ANNEX A: List of Documents to be reviewed by the MTR Team

1. PIF
2. UNDP Project Document
3. UNDP Environmental and Social Screening results
4. Project Inception Report
5. All Project Implementation Reports (PIR’s)
6. Quarterly progress reports and work plans of the various implementation task teams
7. Audit reports
8. Finalized GEF focal area Tracking Tools at CEO endorsement
9. Oversight mission reports
10. All monitoring reports prepared by the project

The following documents will also be available:

11. Project operational guidelines, manuals and systems
12. UNDP country/countries programme document(s)
13. Minutes of the Ecosystem-based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia project Board Meetings and other meetings (i.e. Project Appraisal Committee meetings)
14. Project site location maps

ToR ANNEX B: Guidelines on Contents for the Midterm Review Report³⁴

³¹Engagement of the consultants should be done in line with guidelines for hiring consultants in the POPP:

<https://info.undp.org/global/popp/Pages/default.aspx>

³²<https://intranet.undp.org/unit/bom/pso/Support%20documents%20on%20IC%20Guidelines/Template%20for%20Confirmation%20of%20Interest%20and%20Submission%20of%20Financial%20Proposal.docx>

³³http://www.undp.org/content/dam/undp/library/corporate/Careers/P11_Personal_history_form.doc

³⁴The Report length should not exceed 40 pages in total (not including annexes).

- i. Basic Report Information (*for opening page or title page*)
 - Title of UNDP supported GEF financed project
 - UNDP PIMS# and GEF project ID#
 - MTR time frame and date of MTR report
 - Region and countries included in the project
 - GEF Operational Focal Area/Strategic Program
 - Executing Agency/Implementing Partner and other project partners
 - MTR team members
 - Acknowledgements
- ii. Table of Contents
- iii. Acronyms and Abbreviations
- .
1. Executive Summary (*3-5 pages*)
 - Project Information Table
 - Project Description (brief)
 - Project Progress Summary (between 200-500 words)
 - MTR Ratings& Achievement Summary Table
 - Concise summary of conclusions
 - Recommendation Summary Table
2. Introduction (*2-3 pages*)
 - Purpose of the MTR and objectives
 - Scope & Methodology: principles of design and execution of the MTR, MTR approach and data collection methods, limitations to the MTR
 - Structure of the MTR report
3. Project Description and Background Context (*3-5 pages*)
 - Development context: environmental, socio-economic, institutional, and policy factors relevant to the project objective and scope
 - Problems that the project sought to address: threats and barriers targeted
 - Project Description and Strategy: objective, outcomes and expected results, description of field sites (if any)
 - Project Implementation Arrangements: short description of the Project Board, key implementing partner arrangements, etc.
 - Project timing and milestones
 - Main stakeholders: summary list
4. Findings (*12-14 pages*)
 - 4.1 Project Strategy
 - Project Design
 - Results Framework/Logframe
 - 4.2 Progress Towards Results
 - Progress towards outcomes analysis
 - Remaining barriers to achieving the project objective
 - 4.3 Project Implementation and Adaptive Management
 - Management Arrangements
 - Work planning
 - Finance and co-finance
 - Project-level monitoring and evaluation systems
 - Stakeholder engagement
 - Reporting
 - Communications
 - 4.4 Sustainability
 - Financial risks to sustainability
 - Socio-economic to sustainability
 - Institutional framework and governance risks to sustainability
 - Environmental risks to sustainability
5. Conclusions and Recommendations (*4-6 pages*)
 - 5.1 Conclusions
 - Comprehensive and balanced statements (that are evidence-based and connected to the MTR's findings) which highlight the strengths, weaknesses and results of the project

5.2 Recommendations

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives

6. Annexes

- MTR ToR (excluding ToR annexes)
- MTR evaluative matrix (evaluation criteria with key questions, indicators, sources of data, and methodology)
- Example Questionnaire or Interview Guide used for data collection
- Ratings Scales
- MTR mission itinerary
- List of persons interviewed
- List of documents reviewed
- Co-financing table (if not previously included in the body of the report)
- Signed UNEG Code of Conduct form
- Signed MTR final report clearance form
- *Annexed in a separate file:* Audit trail from received comments on draft MTR report
- *Annexed in a separate file:* Relevant midterm tracking tools: Adaptation Monitoring and Assessment Tool

ANNEX VIII: UNEG Code of Conduct for Evaluators/Midterm Review Consultants³⁵

Evaluators/Consultants:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

MTR Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Consultant: Dr. Ingrid Hartmann

Name of Consultancy Organization (where relevant): DRYRES

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at Berlin (Place) on November 1st, 2014 (Date)

Signature: Ingrid Hartmann

³⁵ www.undp.org/unegcodeofconduct

ToR ANNEX IX: MTR Report Clearance Form

(to be completed)

Midterm Review Report Reviewed and Cleared By:

Commissioning Unit

Name: _____

Signature: _____ Date: _____

UNDP-GEF Regional Technical Advisor

Name: _____

Signature: _____ Date: _____



Kingdom of the Netherlands



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



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



Report of the Terminal Evaluation
Keith Swenson and Shajinbat Erdenebileg
December, 2012

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. As much as 80% of 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 Action Plan for Combating Desertification (NAP) as well as 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 (m³)			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 participants 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 a 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 to 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 the 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 II 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 saxaul 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.

Keith Swenson, Shajinbat Erdenebileg

December 20, 2012

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.

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

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 policies.

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 AIAGaC 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 aimag, 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 2011 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,

- sexual 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, sylvopastoralism 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 included a “Law on Pasture”, the “Law of Mongolia on Soil Conservation and Desertification Control”, and the “National Action 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 management 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 communities. 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 conservation and desertification control and the upcoming law on pasture when approved by Parliament. The field workshop 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 UNCCD 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 as this LPA's guardians. In Ergon 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 Ulaan 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 lessening 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, sylvopastoralism 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 an 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 its 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 aimag 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 tugriks 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 II 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 sylvopastoralism 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 saxaul 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 II 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 II 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 II was developed for Mongolian conditions. Significantly the MN&GD has approved LADA II 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 II methodology now approved by the ME&GD and 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 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 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 better 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 saxaul forest rehabilitation**

Output 3.5: Pilot projects in “sub-desert zone”, in two Gobi Souns (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 saxaul 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 in 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 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 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.

10. Replicable Actions

The five items below are project actions that can be replicated in non-target areas. Rotational grazing practices and the eco-schools are already seeing a multiplier effect outside of the project target soums. It is recommended that these actions be considered and further promoted by Ministries and government land agencies.

10.1 Rotational Grazing

The UNDP SLMCD project, worked with soum administrations, land, environmental and pasture management officers, to learn about and reintroduce rotational grazing practices to herder groups in the 13 project target soums in Tuv, Sukhbaatar, Dornogobi and Uvurkhangai aimags. Through project supported workshops, training and exchanges, herder groups formulated and successfully implemented an agreed rotational grazing regime in their areas in all 13 target soums. The area now under rotational grazing management totals 961,700 hectares.

The practice has drawn interest from surrounding soum administrations and non-target herder households and groups. It has been reported that non target area herders are formulating their own agreed rotational grazing plans and expanding on this method of pasture management, replicating herder group efforts in the target soums. This is a good multiplier effect of the project. As a practice for better pasture health and grassland biodiversity to combat land degradation and desertification, it should be considered by aimag and soum administrations and land officers as a viable method of sustainable land management.

10.2 Spring rehabilitation

Eighty three (83) springs were rehabilitated under the project in the 13 target soums. Working with the soum land and environmental officers and local herder groups, sand was removed, channels cleared, stone nets were created to prevent sand movement back into the springs and fencing was erected around the spring areas. These were herder community efforts with technical input and training from project and CDS staff.

This is an action that is easily replicated beyond the project target soum herder groups. There are now local resource persons among the target herder groups, soum project coordinators and soum land, environmental and pasture management officers to help promote and train herder community and soum administration and land officers in non-target areas. The Center for Desertification Studies is the agency with the technical knowhow and training experience to help develop spring rehabilitation further.

10.3 Hand dug wells

Under the project 89 hand dug wells were rehabilitated or newly created. Training given with project technical input included how to protect the wells from livestock trampling, cover the wells properly to keep out debris and sand and to keep it clean for use and to channel water away from the well itself to where livestock can access and drink. Herder groups, project soum coordinators and soum land and environmental officers were trained in how to rehabilitate wells and maintain them properly for continued use. Local resource person with the herder groups and soums are available to help promote hand dug well rehabilitation, making this another easily replicable action that can be promoted in non-target soums.

10.4 Saxaul forest regeneration

Working with the Center for Desertification Studies in the Institute of Geo-Ecology, the project supported training in Baruunbayan Ulaan and Bogd soums of Uvurkhagai aimag with developing saxaul nurseries to regenerate young saxaul bushes and then replant saxaul forest areas. Training included how to collect saxaul seeds, germinate and grow in easily made tube pots, care for young seedlings until ready to replant, and then plant seedlings in open areas for saxaul forest regeneration. The herder groups and cooperatives have now regenerated 28 hectares of saxaul forest. The technical aspects of saxaul regeneration are fairly straightforward and easily replicable with the proper training. There are now local herder groups and cooperatives in each of these soums along with soum project coordinators, land and environmental officers who have the experience and training to help promote and replicate this practice in non-target areas and are good local resource persons to draw upon.

10.5 Eco-school program

The eco-school program adapted from CODEP was introduced into the 13 project target soums in 2010 and has been enthusiastically embraced by the school students and teachers. This program promotes important environmental education among the countryside youth and local soum residents. The eco-clubs formed through this program in soum schools, not only involves students and teachers, but parents of students as well, expanding the reach of the program well into the local communities. Between the SLMCD project and CODEP, there are now 69 soums with eco-school programs. Soum schools outside the 13 project target areas have noticed and are now taking up this program on their own, learning from and replicating the existing eco-school programs. This is a great multiplier effect of the SDC/CODEP and UNDP/SLMCD projects and has the potential to be expanded to every soum school in the country.