

Final Evaluation Report

IC Reference: [Terminal Evaluation of Afar Integrated Dry lands Management Project](#)

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List of Acronyms

10YSP	10 Year Strategy Programme of the UNCCD
ACMAD	African Centre for Meteorology and Development
ANRS	Afar National Regional State
AIDLMP	Afar Integrated Dryland Management Project
BDR	Building Dryland Resilience
DDC	Drylands Development Centre
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
EPLUA	Environmental Protection Land Use Authority
EWS	Early Warning System
GEF	Global Environment Facility
HFA	Hyogo Framework for Adaptation
ICPAC	IGAD Climate Prediction and Implementation Centre
IDDP	Integrated Drylands Development Programme
LEAP	Local Environmental Action Programme
MDG	Millennium Development Goal
NAP	National Action Plan
NGO	Non-governmental organization
PPP	Public Private Partnerships
RBIPMA	Removing Barriers to Invasive Plant Management in Africa

SLM	Sustainable Land Management
UNCCD	United Nations Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme

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The achievements of the project have been very impressive to me, and I wish very good success to all involved institutions for coming project phases and all the best to the people of Afar.

Ingrid Hartmann, Berlin, Germany, April 29th 2014

0. EXECUTIVE SUMMARY AND GENERAL FINDINGS

The project has identified numerous best practices to address land degradation and climate change which have proven to support livelihoods in the targeted Woredas and are feasible to be up-scaled, upgraded or replicated as standard interventions. The project performance is very good to good as highlighted in Table 1.

Table 1: Overall Project Performance

Intervention	Feasibility	Effective-ness	Efficien-cy	Relevance	Sustai-nability	Impact
Project Design	5	n.a.	n.a.	n.a.	n.a.	S
Implementation Approach	6	6	6	n.a.	n.a.	S
Bottom-up Approach	6	6	6	R	4	S
Gender issues	6	6	6	R	4	S
Coherence with UNCCD	4					
Technical Reporting	5	4-5	5	R	n.a.	n.a.
Financial Reporting	n.a.	n.a.	n.a.	R	n.a.	n.a.
Integrated Nature	6	6	6	R	4	S
Office Equipment	6	6	6	R	4	S
Livestock and Customary NRM Documents	6	4	n.a.	R	3	M
SWC	6	6	6	R	4	S
Invasives	6	6	6	R	2-3	S
Enclosures,	5	6	6	R	2-3	S
Fodder banks	5	6	6	R	2-3	S
Shifting Grazing	4	4	4	R	2-3	M
Irrigation	n.a.	n.a.	n.a.	R	1-2	M
Shallow wells	6	4	5	R	3-4	S
Roof Water Harvesting	6	5	5	R	3-4	M
Solar Panels	6	5	6	R	3-4	S
Livestock Marketing Centre	6	4	4	R	3-4	S
Alternative Construction	5	6	6	R	3-4	M
Saving Rings	6	4	6	R	n.a.	n.a.
Cooperatives	6	4	4	R	2-3	S
Professional Trainings	6	6	6	R	3-4	S
School Clubs	5	4	6	R	2-3	M
EWS	4	3	3	R	2	N
Awareness Raising	5	5	4	R	3-4	M

Score: Feasibility, Effectiveness, Efficiency, Coherence: 6 = highest, 0 = lowest

n.a. = not assessed or non-assessable.

Sustainability (4 = negligible risks, 1 = severe risks)	Relevance 2. Relevant (R) 1. Not relevant (NR)	Impacts 3. Significant (S) 2. Minimal (M) 1. Negligible (N)
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Further funding of the project is urgently recommended.

The project has **changed the original design** on policy advice by EPA from a focus solely on SLM towards a broader framework on climate change adaptation, which integrates SLM. The change was feasible and successful in ensuring the necessary political support.

There are some weaknesses in project design and **reporting**, which could be overcome by capacity building in these issues.

Gender issues are well addressed but could be conceptualized in a broader way than now and include also incomes, labor distribution, access and rights.

All activities of the project are **relevant** in respect to the objectives of the project and the needs of communities.

Effectiveness of implementation strategies like taking a bottom-up approach, ensuring resilience and the integrated nature of the project is high to very high. Only two interventions – the establishment of a livestock market centre in Awra and two irrigation schemes, could not be finalized. All other interventions were accomplished, and services were interrupted in less than 10% of the cases, and only in few of the interventions. The project has shown highest effectiveness in the introduction of innovative sustainable technologies, such as solar panels for education and cold chain in the health sector, as well as in soil and water conservation activities.

The **implementation strategy** has effectively taken a bottom-up approach based on the identification of best practices. The perception of best practices by the project is slightly biased towards a technocratic view and could be improved by including also “soft” practices, like stakeholder involvement, dealing with trade-offs and practices of mainstreaming technologies into policies and NRM etc..

The overall **efficiency** of the project and of most interventions is also high with respect to time, cost and carbon efficiency. For increasing labor efficiency of some interventions, in particular control of invasive species, support by science and technology could be sought. Efficiency could also be enhanced, if the project would focus on horizontal and vertical integration of activities, in particular for water development and cold chains.

The project has successfully ensured institutional, political and financial **sustainability**, primarily by gaining full support of the political level through the wise merging of political needs into the project design. Inter-sectoral collaboration is part of the beauty of the project and involving key bureaus into the implementation allows the successful implementation of a multi-sectoral approach by bringing the available skills, knowledge and responsibilities in different disciplines, institutions and agencies together. The high number of trainings for the various interventions contributes to the sustainability of interventions on community levels. Ensuring environmental sustainability is the greatest challenge due to erratic climate and vegetation, but many of the interventions, such as solar panels and SWC enhance environmental sustainability themselves and can be managed by communities.

For the **future**, activities should both focus on up-scaling and upgrading project activities, furthermore on the improvement of enabling conditions for integrated dryland management through capacity building, and mainstream the best practices identified by the project into further policies and targets, which merge UNCCD goals with national goals. Finally the project could try to tap climate adaptation funds for future financing.

As an UN organization, UNDP could address the problems the Region faces on national and international level, in particular through support to land use suitability assessments, land management through adapting livestock mobility to environmental change and water development. Particular issues could be the balancing of land with water resources, sustainable fuel-wood management, control and handling of invasive species, social and alternative livelihoods for drop-outs from pastoralism. UNDP could create regional task forces on IGAD level on some of these issues. Supporting science and knowledge could be achieved through implementing a CB-2 project funded by GEF.

Detailed recommendations are given in Table 2.

Table 2: List of Observed Issues and Recommendations

Issue	Observation	Recommendation
General	Project tested and demonstrated many different activities for climate change adaptation and SLM, proving them to be feasible and effective	Up-Scaling and Up-grading Funding of future phases, in particular for land degradation neutrality and SLM Embedding best practices into appropriate agricultural, pastoral, forestry and other NRM policies
	Impacts of projects are very positive, but different to different stakeholders	Project could better monitor impacts by using impact indicators and assessing trade-offs of project impacts on land, water, mobility for different land users
	Land and water issues could be integrated	Establishment sub-catchment and catchment plans which integrate water and land issues. Implementation of water development along grazing routes as identified in Afar regional Climate Adaptation Plan Supporting land suitability mapping for the region
	Project could benefit from better data bases and scientific research	UNDP could try to implement a CB-2 (knowledge management) project funded by GEF, if possible, furthermore encourage Semera University to send their students for internships and research programmes for simple data collection and mapping activities, furthermore should encourage collaboration with FAO on establishment of vegetation, land cover, land use suitability maps etc. and encourage and involve into international research
	Internationally, strategies to deal with invasives are fragmented, inconsistent, under-funded and under-researched, nationally it is hard manual work	UNDP could establish task force to handle the issue in collaboration with RBIPMA project of UNEP
	Project focusses on implementation of best practices	Best practices could also include software related activities, such as policy focus, stakeholder involvement etc..
	Environmental sustainability risks for irrigation and enclosures, financial for solar panels	Drafting bylaws, tapping climate funds and PPPs, ensuring lateral flows between vegetation patches during NRM
	Project could benefit from clear targets on land coverage	Implementing Land Degradation Neutrality
Gender	Addressed through health issues and	Could be expanded by making equitable labor distribution, incomes, access and rights project targets

	involvement in activities	
Reporting	New logframe partly fragmentary	Newly recruited local UNDP project staff could receive training in RBM directly after recruitment as a standard service ProDoc adjustment to changes which were decided upon
	Inadequate financial reporting	Giving training to staff responsible for financial reporting on all levels
Documen- tations	High added value of documentation on traditional NRM governance and Livestock	If considered feasible, editing and publishing of second part of traditional documentation Using the documents for implementation of coming project phases
	Interest into capacity building on mapping skills by line bureaus, project staff and others	Training on participatory mapping techniques for basic level, training in GPS, QGIS or GIS for more advanced level of staff responsible for NRM and planning
Soil and Water Conservation	Highly feasible and relevant	Should be further up-scaled. For up-scaling in other areas communities might need initial incentives, trainings or support of materials, and should integrate their roles and duties in SWC in by-laws.
Control of Invasives	Regional problem of all rangelands in HoA, but under-researched and underfunded and no common strategy developed.	UNDP should create a task force on dealing with invasives in rangeland on IGAD level and should support and encourage research and innovation Rapid Response Mechanisms for the Early Detection of and Rapid Response to new infestations of invasive alien plant species should be established from federal to Kebele levels.
Enclosures and rotational grazing	Not clear, if local management ensures maximum productivity	By-laws and local management plans should be re-checked, if productivity concerns are adequately addressed, and if not, management options for maximizing productivity introduced
Fodder banks and hay production	Creates trade-offs on water and land Seed scarcity Higher requirement to soil quality	Up-scaling only possible in agro-pastoral land, where land and water resources are sufficient Plants selected should have high biomass productivity Upgrading by project-owned seed production Considering night-corralling as option for improving soil nutrients and soil organic matter Additional introduction of cut-and-carry systems Comparing cost-and benefits of hay production with other options of supplementary feeding
Shifting Grazing and Destocking	Shifting grazing exists anyway and visibility of encouragement through project activities needs further strengthening	Moving towards a modern system of livestock mobility which integrates conservation issues Solving the question of opportunistic versus controlled grazing under consideration of optimized pastoral productivity, valuation of pastoralism versus other land uses, taking fully into account all ecosystem services. Assessing the option of livestock trucking to ensure livestock mobility in a modern way Supporting livestock mobility for rangeland management, wherever considered feasible
Irrigation	Kebeles with access to irrigation request up-scaling. No data available. Huge structure very vulnerable in summer. Trade-offs with pastoralism	Feasibility should be re-assessed by an irrigation expert to whom available data should be provided. Updating hydrological data and information and making them available to all staff occupied with irrigation Establishing integrated water management and land use plans to avoid trade-offs Considering multiple water uses and assessing alternative irrigation methods for improving water use

		efficiency and productivity under consideration of cost-benefits of all ecosystem services affected
Handpumps, shallow wells and Animal Troughs	Shallow wells fall sometimes dry	Considering deep wells as alternative. Otherwise up-scaling within Kebele and outside. Developing water points in rangeland, where water is constraining grazing. Removing redundant ones.
Roof Water Harvesting	Technically feasible	Cost-benefit analysis to compare with other water harvesting technologies, extending technology to both sides of the roof, up-scaling to other Kebeles
Solar Panels	Technically feasible, expensive	Up-scaling to other Kebeles and Woredas, looking for alternative batteries, such as ice bank batteries, identifying alternative funding options through PPP or from climate funds
Alternative Construction	Technically feasible, needs encouragement for replication	SWOT analysis before large scale replication in villagization programmes, improving size, design and amenity values
Saving Rings	Membership fee entry barrier to poor people, who furthermore do not have much to save	Establishing community fund and ensuring repayment by linking it to by-laws and certain incentives
Cooperatives	Unstable membership	Relating membership to by-laws and providing support system for potential drop-outs
Trainings		Ensuring sufficient professionalism of trainers and sufficient duration of trainings
Environmental School Clubs	Frequently targeted activities inhibited due to water scarcity	Diversification of activities towards creation of synergies with education and fulfilling data and information needs of project
Early Warning systems	Poor Communication, Narrow Approach, Traditional Early Warning systems not effectively revitalized	Addressing underlying communication problems on governmental level, linking up with UNISDR for HFA implementation, including disaster management and resilience approach into EWS, budgeting more time, or small grant project, for revitalization of traditional EWS. Collaborating with meteorological and climate organizations like MetServices, ICPAC, ACMAD and African Policy Centre.

1. INTRODUCTION

1.1. BACKGROUND OF THE PROJECT

The Afar Integrated Dryland Management Project (AIDLMP) is a scale-up of a pilot project implemented in Mile Woreda (the 'Mille Integrated Dryland Management Project', also known as the "Mille Project") in Afar National Regional State (ANRS), from 2006 – 2008, as part of the implementation of the UNCCD in Ethiopia, funded by the Government of Norway as a support of TerrAfrica as a sister project to the SLM Cattle Corridor project in Uganda under the same umbrella. The Ethiopian project is conducted by the arm of EPA in Afar, EPLUA, in the context of UNCCD/IDDP implementation to improve the livelihood and coping mechanisms of pastoral communities in 5 weredas by enhancing their capacity to sustainably manage and use natural resources for the adaptation to climate change, which are identified in the 5 Woredas. As such the project is addressing some of the key objectives of IDDP in drylands, which are

- Mainstreaming of drylands development issues into national policy and planning frameworks;
- Improving local governance of natural resources;
- Reducing vulnerability of poor populations to climatic shocks especially drought; and
- Promoting livelihood diversification and market access for dryland products.

The project has also contributed until 2012 to the UNDAF Outcome: *"By 2012, significantly strengthened capacities of the Government, communities and other relevant stakeholders to respond to situations that threaten the lives and well-being of a significant proportion of a population, which require rapid and appropriate action to ensure their survival, care, protection and recovery while enhancing their resilience to shocks and leading to food security and sustainable livelihoods."* Later on it contributed to UNDAF Outcome 5: *"By 2015, the governance systems, use of technologies and practices, and financing mechanisms that promote low carbon climate-resilient economy and society are improved at all levels".*

1.2. THE PROJECT AREA

The project area is located in the Afar region as part of the East African Great Rift Valley. The climate is characterized by high temperatures and low to medium, but erratic rains, which fall within a very short period.

Vegetation in many parts is sparse with patches of Acacia woodlands, bush and grassland. However, a major portion of ANRS is now degraded scrub and range land, with only about 2.5% of the land under cultivation. Most of the cultivated land of ANRS is located along the Awash River and is run by investors and by the state. Agricultural use covers only about 0.3% of the total land area in Afar. 90% of the estimated population of 1.4 million are pastoralists, mainly transhumant pastoralists, while the remainder is practicing agro-pastoralism. Transhumance pastoralism is the major production system in the region where cattle (~22%), sheep (~24%), goats (~43%) and camels (~9%) are the dominant animals. Draught animals – donkeys/mules/horses constitute about ~2%.. In a few places, pastoralists grow crops with supplementary irrigation from permanent rivers.

Climate change adds to the burden of those who are already poor and vulnerable by affecting their livelihood pattern and strategies and triggering food, feed, water and social insecurity in particularly through increased droughts. Drought has been a feature of the Afar region since time immemorial and was seen as recurring within intervals of an average of 10 years, but during the past decades drought seemed to occur more frequently, in some areas almost every year, leading to severe land degradation and losses of livelihoods. This leads to reduced severe land degradation and availability of pasture and water, exacerbates the overall food security situation and causes losses of livelihoods, which often results in clashes with neighbouring pastoral groups.

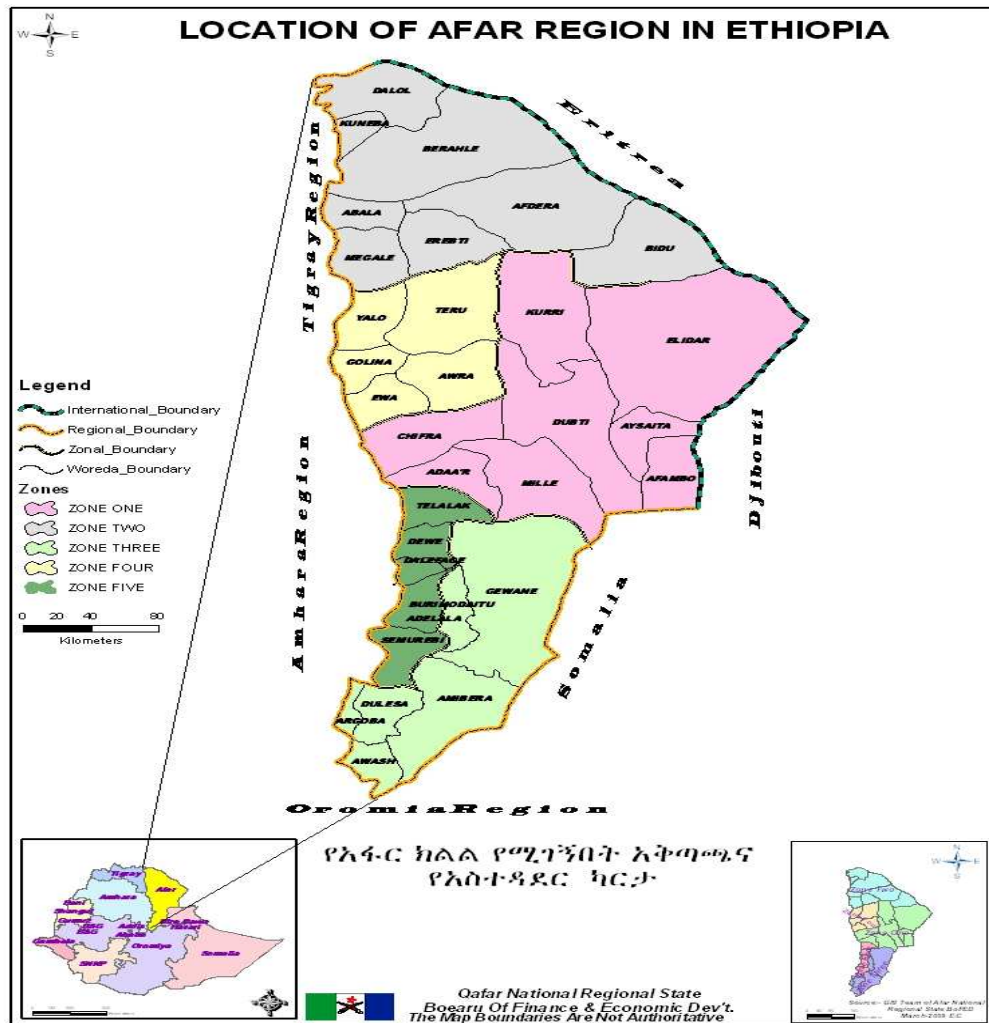


Fig. 1: Location of Project Area

2. PROJECT DESIGN

2.1. CHANGES IN PROJECT DESIGN AND IMPLEMENTATION

During the project cycle, various changes and adaptations have been conducted, which are reported in the following.

2.1.1. DELAYED START

The project was supposed to be started in March 2010, but there were major constraints during the first implementation year, which were in particular the need for lengthy negotiations with the GoE / EPA on the project document and annual work plans. Furthermore, after the project document had been finalized by a technical advisor hired by UNDP, EPA suggested to mainstream certain features of climate adaptation plans into the project document. The climate adaptation plans had been drafted by a Spanish NGO in collaboration with communities within the same project Woredas, managed also under EPA and were finalized after the AIDLMP was expected to start. Therefore, EPA had recommended to postpone the project start, until these plans were finished, which delayed the beginning about half a year.

2.1.2. CHANGE OF LOGFRAME AND ENVISIONED ACTIVITIES

The logframe of the original version of the project document contained the following elements, focussing mainly on SLM and NRM:

“1. Project Purpose

The project purpose is to improve the livelihoods and coping mechanisms of pastoral communities in five Woredas through sustainable management and use of natural resources by supporting regional and local institutions to mainstream environmental issues into development activities.”

The original project documents highlights further four output areas, which have been maintained throughout the project, but activities during project implementation deviated substantially from the ones envisioned in the original logframe, therefore, in the following, for each output the original results and activities are listed, followed by the activities, as they have finally been implemented.

“ 1. Outputs, Results and Activities”

The project has four different output areas with various result areas, which are illustrated below, including the major activities conducted between 2011 and end of 2013.

“Output 1: Institutional Support for integrated dry land management

- 1.1. Activity Result: Project Team & Office established
- 1.2. Activity Result: Project Coordination Adviser recruited (International UNV)
- 1.3. Activity Result: Transport for PCU and project wereda is available
- 1.4. Activity Result: PCU equipped
- 1.5. Activity Result: 5 UNV Woreda field workers recruited
- 1.6. Activity Result: Community consensus on project scope / priorities and on organization established
- 1.7. Activity Result: SLM platform strengthened with local support groups
- 1.8. Activity Result: Strengthened project implementation effectiveness
- 1.9. Activity Result: EPA project field monitoring and reporting
- 1.10. Activity Result M&E missions, workshops and reporting
- 1.11. Unforeseen costs

Output 2: Strengthen capacity for Sustainable Dryland Management

- 2.1. Activity Result: Strengthened capacity in local level dryland management*
- 2.2. Activity Result: LEAPs developed and endorsed*
- 2.3. Activity Result: Strengthened capacity of National and Regional dryland management monitoring*
- 2.4. Activity Result: Draft proposals for SLM / natural resources management prepared by project groups with NGO partners*
- 2.5. Activity Result: Sustainable fuel and woodland management implemented*
- 2.6. Activity Result: Natural resource / local watershed conservation for soil and water management*

Output 3: Livelihood diversification activities support (recommended activities)

- 3.1. Activity Result: Livelihood diversification support assessment in 5 Woredas*
- 3.2. Activity Result: Water conservation and management, including provision of Water supply*
- 3.3. Activity Result: Livestock health / fodder / pasture management*
- 3.4. Activity Result: Women's income generation*
- 3.5. Activity Result: Youth income generation*
- 3.6. Activity Result: Agro-pastoral livelihood support*

Output 4: SLM Communication and Information dissemination

- 4.1. Activity Result: Local SLM-awareness raised and materials for print and media developed*
- 4.2. Activity Result: Community Vulnerability profiles established*
- 4.3. Activity Result: SLM Information point in each Woreda established*
- 4.4. Activity Result: Learning promoted and knowledge shared.*

Changes in the project strategy to this framework were made to tailor the project framework better to the CRGE Green Economy Strategy to be Carbon Neutral and Climate Resilient by 2025, which led to a change of the project scope and various activities, while result areas were maintained

The original overall goal was changed in its scope towards a more general climate change adaptation goal:

« The AIDMP aims to strengthen the adaptive capacity of Afar people in building climate resilient sustainable development through the implementation of the Regional and Woreda level Climate Change Adaptation Programme, which will be the basis for implementing local level integrated dryland management programme initiatives. »

including the following objectives of the project in the new logframe :

- « i. Strengthen local and regional adaptive capacity to the impact of climate change and for integrated dryland management and environmental sustainability as basis for increasing livelihood resilience and poverty reduction, with attention to both men and women's roles in local-level NRM.*
- ii. Assist to improve the ability of Kebele groups and wereda experts to implement environment action plans in the areas on which they have identified in their adaptation programme and plans to improve their livelihoods.*

iii. Support the building of coalitions between various community members and weredas in order to enable collaboration for the materialization of their adaptation programme and plans, which can be the springboard for more and larger initiatives on environment and development. »

The change of the overall objective is not mirrored by a change of result areas, which remain the same in the second logframe remain the same as in the first logframe, but in a change of activities, which are listed in the following:

“Output 1: Institutional Support for integrated dry land management

Activities reported for 2011

- Project team and office establishment
- Project staff recruitment
- Equipping regional and wereda project coordination unit offices with furniture and office supplies
- Strengthening regional EPLUA with furniture and office supplies
- Transportation : Provision of 5 motor bikes and a double cabin vehicle
- Regional and wereda project management and technical committee establishment

Additional activities reported for 2012

- Training on monitoring and reporting
- Community and wereda level consultation
- Integrated vector management training for community health workers
- School environmental club establishment

Additional activities reported for 2013

- Supporting EPLUA with information / communication network (internet)
- Conducting a Regional IDLMP Management (Steering) and Technical Committee Meeting)
- Conducting a Woreda Regional IDLMP Management (Steering) and technical Committee meeting)

Output 2: Strengthen capacity for Sustainable Dryland Management

Activities reported for 2011

- Assessing and documentation of traditional natural resource conservation practices of Afar community
- Community mobilization
- Experience sharing visit
- Solar panel installation
- Construction of soil and water conservation structures
- Gullies and riverbank stabilization
- Natural resource conservation and management training
- Area closure and invasive weed /bush management
- Training to revitalize shifting grazing
- Provision of water supply

Additional activities reported for 2012

- Training on operation and maintenance of solar panels
- Provision of alternative construction materials
- Establishment of fodder bank

Additional activities reported for 2013

- Establishment of livestock market centre in Awra
- Supply and installation of 3 PV systems in additional 3 health institutions
- Training of 20 local residents and government employees on operation and maintenance of PV system
- Construction of 5 model mud houses in five Woredas at model schools
- Construction of gabions for river side rehabilitation
- Preparation of local guidelines for sustainable livestock production
- Construction of 10 roof water harvesting systems at model schools

Output 3: Livelihood diversification activities support

Activities reported for 2011

- Construction and maintenance of irrigation structures
- Establishment of saving and credit associations

Additional activities reported for 2012

- Irrigation association establishment and training
- Skill training need assessment, strategy development and training
- Business skill training

Additional activities reported for 2013

- Procurement and supply of production tools for 90 trained youths to create business
- Support to community: 5 cooperatives engaged in micro-business including improvement of value chain in milk production

Output 4: SLM Communication and Information Dissemination

Activities reported for 2011

- Provision of information board
- Assessment of existing regional early warning system
- Baseline Survey

Additional activities reported for 2012

- Training to strengthen regional early warning system

Additional activities reported for 2013

- Development of IDLM awareness materials, eg. Brochures, posters in Afar language
- Preparation of information and communication products and broadcast through radio and TV
- Knowledge dissemination and trainings

The new logframe abandoned activities, which were initially envisaged, such as wood fuel management, the writing of proposals for small grant funds, strengthening the national UNCCD focal point, recruitment of UNV staff etc. which was partly due to a common review of the suggested activities by DDC and UNDP Addis. Other activities were added, such as the introduction of solar panels etc.. The project decided also to implement certain activities, such as the drafting of LEAPs, in a different way, as for instance through community consultations. A revised logframe is only attached to Annual Report 2013, but only for the reporting period 2013. Different from the first logframe, the second logframe uses no impact indicators but only management (output) indicators, which measure, if the envisaged activity has been conducted, and how many beneficiaries are reached.

2.1.3. NO-COST EXTENSION

Another deviation from the original project design was conducted at the end of the project. It was a no-cost extension until November 2013 upon suggestion by the Mid-Term Review, which allowed the project to finalize all its targeted activities

2.2. MONITORING, REPORTING AND COMMUNICATION

Internal monitoring is based on continuous communication between UNDP and DDC and UNDP and EPLUA, EPLUA and Woreda and Kebele levels. Collaboration, communication and solidarity between all these institutions seems to be very high, as observations during the evaluation period indicated. All institutions involved were informed in detail about the project progress and its activities. Communication is based on daily phone calls, emails, regular meetings and other forms of exchange. Therefore, there is no doubt on the high effectiveness of internal monitoring within the project.

External evaluation, which is more dependent on reporting, was facing certain, but minor difficulties. Annual reports were made available for the years 2011, 2012 and 2013. They have a high information density, even illustrated by a rich diversity of photos, and are of good quality. The annual report 2013 contains a reference to the new logframe, but is the only one with this component. Annual Reports of later phases repeat the activities of former phases, without indicating their implementation periods exactly. It is therefore sometimes difficult to follow up, which activities have been conducted when. This might be owed to the fact that the project works actually in three languages, and therefore not all project documentation might be compiled in English language in the first place. The Bureau of Economics and Finances confirmed the correctness and completeness of all financial reports, but initially Kebeles had some skill gaps in financial reporting.

Recommendations:

- Reporting skills on local project level could be enhanced through provision of training in RBM and financial reporting given routinely after new project staff has been recruited, a suggestion, which is also considered by other UNDP country offices.
- Substantial changes in the implementation strategy should be reported in a revised project document.

2.3. EXECUTING AGENCY AND PARTNERS

The Executing Agency of the project is the Land and Water Management Unit of EPA – EPLUA, formerly hosted by PARDP in Semera (Pastoral Agricultural and Rural Development Bureau) and now in its own premises.

The major partners of the project for implementation are

- **Afar Bureau of Disaster Prevention and Food Security**
- **Afar Bureau of Water Resources** – supported all water related activities
- **Afar Bureau of Women and Children's Affairs** and **Afar Bureau of Youth and Sports**
- **Afar Bureau of Cooperative** - support in organizing pastoralists and agro-pastoralists cooperatives in multi-sectoral activities including irrigation, development of livestock products, livestock marketing, saving and credit activities.

- **Afar Bureau of Education and Afar Bureau of Capacity Building** – supported capacity building components of the project
- **Afar Regional Agriculture Research Institutions including Melkawerer Agricultural research centre** – contribute experience in best local practices such as irrigation, water management and drainage, dryland natural resources and pastoral and agro-pastoral issues.
- **BOFED** – Bureau for Finance and Economic Development

Feasibility: The project has established multidisciplinary linkages with all relevant line bureaus, which expresses and supports the integrated nature of the project in adequate ways and allows to implement SLM successfully through a multi-sectoral approach by bringing the available knowledge in different disciplines, institutions and agencies together.

3. RELEVANCE, FEASIBILITY AND SUSTAINABILITY OF ACTIVITIES

3.1. OFFICE FACILITIES

As a first infrastructural measure, office facilities were established as part of Result 1 in the logframe. During the Field Consultation, the respective facilities and the related invoices were checked. Much of the furnitures had already been locked up in a separate room to be used for future phases. The equipment of the office as supported by the project appeared to have filled definite needs and was handled well. Therefore, the implementation of this result appeared to be effective and feasible in a highly satisfactory way. Office facilities do not belong to the burning questions the project has addressed, are not the major question within the project to be evaluated, therefore, no more reference will be made to this.

3.2. DOCUMENTATIONS

The project has produced substantial documentations, the major ones are one on traditional resource use in Afar, another one on traditional livestock practices. The climate adaptation plans are rather the products of the sister project, nevertheless reference to them is made here as well and in the first place, since they are the planning documents for guiding the implementation. Finally, the Mid-Term review is also used to document the best practices of the project.

3.2.1. MID-TERM REVIEW

A Mid-term review was conducted in 2013 and confirmed the high effectiveness, efficiency, feasibility and stakeholder satisfaction with the project. The review also highlights clearly, that the technologies introduced by the project are innovative and new to the area. The mid-term report has almost the character of an outreach document, and could be used as such after conducting a few edits, to support the replication of the technologies of the project.

3.2.2. CLIMATE CHANGE ADAPTATION PLANS

The climate change adaptation plans consist of one adaptation plan on regional level for all Afar and five plans for each of the targeted project Woredas.

The regional plan provides a profile of the Afar Regional State in term of biophysical features, climate and its recently observed changes, demographics and socio-economics, resource base and land use systems, vegetation, land cover and pastoralist mobility, natural hazards, encroachment of invasives, land degradation, stresses, shocks and diseases, vulnerabilities, agricultural, livestock and rangeland productivity. It also contains a stock-taking of all other sectors of the economy, such as transport, telecommunication, construction, biodiversity, energy. It gives particular reference to poverty reduction, early warning, livestock diversity and livelihood diversification, emergency and development interventions.

While the regional plan shows rather the structure of a DPSIR framework, the structure of the Woreda climate change adaptation plans follow more livelihood and resilience frameworks for climate change adaptation to the adaptive capacities of communities to absorb shocks and climate related stress.

The Woreda climate change adaptation plans consist mainly of two parts, initially an analysis of climate change impacts on all major sectors, then another part, which refers to adaptation interventions. .

Analysis, conclusions and recommendations for the different sectors are similar for the different Woredas. Most detailed local information, which actually justifies the drafting of extra plans on Woreda level, is given mainly in the plans for Ewa and Awra, which have undertaken detailed stock-taking exercises about the resources available there.

It was not possible to review the climate adaptation plan of Dawe due to language constraints of the evaluator.

Feasibility and Relevance: Since the climate adaptation plans have been established in a different project, they are not the subject for evaluation in this place. However, the question, how relevant and and feasible it is, to use these plans as guiding documents for the project, is a matter of the evaluation.

At first it can be said, that climate change adaptation is also the expressed concern of TerrAfrica, and therefor matches the goal of the project to contribute to the implementation of TerrAfrica. On a second thought, it should be considered, that the focus of the UNCCD is narrower, targeting land degradation, droughts and desertification, and this narrower focus has to be maintained, when using the climate change adaptation plans for guidance. Considering the major recommendations of the Regional Climate Adaptation Plan, however, it shows clearly, that the narrower focus on land is maintained there.

3.2.3. DOCUMENTATION ON TRADITIONAL RESOURCE USE IN AFAR

The document was written to illustrate traditional practices in resource use on the basis of secondary literature, so that these practices could be revitalized for sustainable environmental protection, wherever it might be suitable, and even where traditional skills and knowledge might have been forgotten.

The majority of Afar's people live a pastoral life-style, within a culture that has evolved to be suitable as a way of survival in arid and sparsely vegetated land. While a dry land pastoral lifestyle has supported Afar people for centuries, changes of conditions in weather patterns, in the economy, in access to livestock markets and in the disruption of peace through conflicts with neighbours over natural resources, have occurred more or less simultaneously. Several years of drought have worsened overall livelihood conditions and diminished Afar peoples' drought resilience, season by season. Socioeconomic services and infrastructures are underdeveloped in ANRS and the region has a high level of illiteracy, widespread human and livestock diseases, and, due to chronic conflicts, political instability. Moreover, exclusion from traditional dry season grazing grounds due to the establishment of commercial farms, exclusion from cattle markets due to international conflicts, and, water and grazing resource disputes with neighbouring clans and with other ethnic groups have added to the burden of everyday life in Afar. There is a further loss of available pasture land, in some places a severe loss, due to the rapid encroachment of invasive species into the rangelands. These are the issues, which are addressed in the document, which is highlighting, how traditional practices have addressed this problem, since with climate and social change, many of these traditions have either been forgotten or are no more applicable.

The document follows more or less the structure of the DPSIR framework, divided into two parts. In the first part it highlights, how the status of resources wildlife, minerals, water resources and wetlands, rangeland and vegetation resources, have changed through various drivers, such as changes of climate and land use patterns,. It contains maps on pastoral productivity in ArcGIS, and a very valuable record of decreasing and increasing vegetation species.

A second part highlights the traditional responses with particular reference to traditional institutions, governance and livestock, water and rangeland management, including pastoral herd structure and herd splitting, rotational grazing, the role of Eddos (traditional scouts) etc..

Relevance and Feasibility: Both parts are very relevant and of excellent quality and could be instrumental in informing about the status of resources and the opportunities of revitalizing traditional

practice for future resource management in Afar in a more detailed and informed way. It was therefore feasible to assign this documentation. However, obviously currently the document is not really used for future planning; therefore, the value it adds is not really made use of.

Recommendations: The first part, in particular on rangeland vegetation change, could be used as a living document, which is continuously updated to monitor and map increasers and decreasers and other changes of natural resources, so that it could inform further planning for linking biodiversity management with grazing management and other issues

The second part, though informing in detail about traditional management practices, does not provide an analysis about what in traditional rangeland management is still maintained or should be revitalized or abandoned. Therefore it would be recommendable to update this part, preferably in participatory interaction with communities, also to update bylaws which merge traditional with modern institutions in an optimized way.

It might furthermore be recommendable to edit and publish the second part. Even though not all traditional features of resource utilisation might still be appropriate, these are sophisticated strategies which pastoral societies have developed over the centuries to cope with the vagaries of nature, disease, weather and civil strife. Therefore, these traditions contain a wealth of historical and traditional environmental knowledge and maintain therefore the cultural identity of its owners. From a social perspective the traditional system is furthermore the basis on which any development or intervention in the pastoral production should begin, as this is the framework for community development and should be treated as such.

3.2.4. DOCUMENTATION ON SUSTAINABLE LIVESTOCK PRODUCTION

The document on sustainable livestock production consists in its first part mainly of herd management practices and resembles and complements the documentation on Traditional Resource Use. The second part can rather be read as a kind of manual on practicing daily livestock management, mostly referring to feeding and breeding practices, but even detailed descriptions about milking techniques etc..

The recommendations given in the first part are also widely congruent with the activities implemented in the project, but also go partly beyond these, which should be used for possible future activities, such as recommendations on equity and conflict avoidance, viewing livestock production from an overarching perspective of satisfying the demand for proteins etc., such as the following ones :

- Equitable access to land, water resources and secure land-use systems, including protection of pastures from encroachment and strengthening of local and/or customary systems so that they are better able to negotiate dry-season access to key resources for pastoralists
- Expansion of trade, integration of markets and increasing regional interconnectivity, together with high and growing demand for animal proteins all over the world
- Conflict avoidance : Pastoralists' reliance on mobility makes them particularly vulnerable to conflict and fear of conflict, which can cut off their access to key resources and block them from important markets
- Technological developments enhancing mobility and telecommunications (e.g. geographic information systems to map the state of rangeland resources);
- Control of trans-boundary animal diseases (e.g. foot-and-mouth disease, rift valley fever, peste des petites ruminants, etc.) as a prerequisite for tapping into global markets. For instance, stringent sanitary standards for international trade in animals and animal products have limited the export of livestock products to profitable international markets (e.g. from countries of the Horn of Africa to Saudi Arabia);
- Enhancement of interlinkages among livestock producers, including pastoralists, as part of the development of domestic markets in developing countries to cope with increased demand for meat and milk.

For lowlands, the documentation recommends :

- Encouraging the establishment of a regular monitoring network which is gender-sensitive in order to study and observe pasture conditions and trends
- Encouraging the implementation of regular monitoring of productivity and management problems for livestock and grazing land

- Encouraging and strengthening the traditional rules of grazing management, demarcation of settlement areas and herd mobility
- Strengthening the traditionally widespread practice of feed conservation in the form of 'Kalo' (traditional hay)
- Encouraging fodder banks through hay and other forms of feed conservation
- Investigating and encouraging selection and supplementation with leguminous trees like Acacia and other forage legumes for dry season feeding
- Setting up a regulated scheme for using fire to control bush and improve animal production and health through reducing tick infestations and improving forage quality

Relevance and Feasibility: The document is highly relevant for the project and it was feasible to assign it. The project has also integrated some of the interventions suggested, and it will be feasible to implement them all in a later stage.

3.3. SOIL AND WATER CONSERVATION

The project has demonstrated extraordinary success in implementing soil and water conservation schemes in rangelands by building upon best practices which already have been proven to be highly feasible in Tigray and Amhara, which were also visited during study tours within the project and which were further fine-tuned to the geomorphological and physical conditions of soils and landscape in the target woredas and Kebeles of Afar.

Soil and water conservation are usually addressed simultaneously, because soils retain water, on the other hand, water can erode soils. The major strategies used for soil and water conservation are to reduce run-off velocity through cross-slope barriers, trapping run-off and soil loss as well as reducing evaporation of soil water and open water resources.

3.3.1. CATCHMENT APPROACH

For soil and water conservation there are both structures which allow to retain (avoid runoff), to trap runoff and to reduce evaporation. In situations where rainfall limits plant growth, the strategy is to avoid any movement of water on the land in order to encourage rainfall infiltration. Thus water storage is improved within the rooting depth of plants, and groundwater tables are recharged, which is critical in semi-arid areas.



SWC structures. Photos : Assefa and Ingrid

The project is applying a catchment approach, mixing various types of structures from the locally available materials which match the physical requirement of the catchment, where soil bunds and stone lines are rather established in hilly areas, a special form of small terraces in the hills of Dewe, while basins are established in rangeland plains, fanjy juu and and fanya chini in areas, also agricultural areas, with very slight slopes.

Technical Feasibility: The technical feasibility of the intervention is very high.

Cross-Slope Barriers reduce runoff velocity and soil loss, thereby contributing to soil, water and nutrient conservation. These are contour bunds, vegetative barriers, fanya juu and fanya chini terraces in slopes with low gradients, while soil bunds and stone lines barriers have been established in the more mountainous areas of the catchment. The effect of stone lines and terraces / soil bunds is achieved by reducing the relative steepness and / or length of slope by interrupting the slope in regular intervals through these structures.

Harvesting (Trapping) runoff is mainly practiced in the rangeland plains, where rainfall is insufficient and runoff needs to be concentrated to improve plant performance, where **planting pits, half moons, water basins in rangelands** etc. are established.

There is **currently no structure that reduces soil evaporation loss**, except the *permanent land cover* generated in enclosures, since such technologies, like mulching, windbreaks etc. are not feasible in the area, because there is not enough material for that.

In this sense, all technologies are appropriately selected and tailored to the environmental conditions of the catchment.

3.3.2. COMMUNITY INVOLVEMENT

Farmer groups with a high proportion of women were engaged for the establishment of the structures.

Social and economic feasibility: Although the contribution of communities was only compensated by providing food for the times of their collaboration, the intervention has for a time also increased rural employment, in particular for women and has therefore contributed to gender equity. Since the work was implemented as communal work, it has enhanced the connectivity among community members.

Relevance and Impacts of the Intervention: The structures facilitates faster regrowth of vegetation through better soil and moisture retention in the dry season, while under rainy condition runoff is diverted and drained and soil erosion and nutrient leaching is avoided by retarding the velocity of runoff waters. Hence the impacts of the structures are quite manifold by enhancing water availability in soils, therefore increasing soil organic matter, which further enhances water holding capacities of soils in a feedback loop and as such also improving range land productivity with all its related benefits, in particular improved feed availability and the potential for carbon sequestration.

The intervention also leads to a protection of water sources, since without soil protection, fine soil particles are carried into water sources, thus accelerating siltation processes and ultimately reducing their water storage capacities.

Adoption of the Intervention, Maintenance and Potential for Up-scaling :

Usually, soil and water conservation is adopted, if land users can recognize net benefits from the intervention, which frequently occurs only after some years after this intervention. Acceptance for soil and water conservation in rangeland is more difficult to achieve, because in common land and under shifting grazing regimes, the likelihood that the single pastoralist might benefit, is lower. However, both professional experts as well as communities consulted confirmed their readiness for up-scaling.

Recommendations:

Maintenance and Rehabilitation : While the stability of the structures is high, they are still susceptible to erosion under heavy winds and strong rains, particularly in lighter soils. During the field consultation it was observed, that several structures required maintenance and rehabilitation. Therefore, maintenance and rehabilitation should become part of a regular management plan.

Sustainability and Up-scaling: Depending on the type of measure, very often the investment costs for establishment of soil and water conservation exceed the short term benefits and will only be visible on the long run. Therefore, incentives to compensate land users for the establishment of these structures might be needed after the end of the project, to maintain the commitment of communities for soil and water conservation. Another option would be to include the regular contribution to the establishment of soil and water construction into community by-laws, and reward the compliance to these by-laws through certain incentives, such as facilitated access to credit etc. to ensure that land users and communities should be able to maintain the system without any external support.

If the technology is expected to be up-scaled at the end of the project, it will furthermore need capacity building and knowledge sharing on suitable techniques, to ensure the sustainability. Trained extension services and self-help groups and organisations should be established for spreading the technology in other areas, where the technology is to be up-scaled as an exit strategy of the project.

3.4. MANAGING INVASIVES AND ESTABLISHMENT OF ENCLOSURES

The management of invasives in Ethiopia is done with a lot of labor and manual work, and the Regional Government is using standardized methods for management, mostly manual removal and burning of the weedy vegetation, combined with certain laws and regulations.

The Ministry of Agriculture has released a manual for *prosopis* management, which is also used by the Pastoral Agricultural and Rural Development Bureau in Afar. It contains mainly a combination of cutting and burning, which is a technology also applied in the project. Furthermore, associations are established, which produce charcoal from



Prosopis juliflora and *Acacia mellifera*, which, however, is considered as ambivalent by the government itself, since there is a high danger that after charcoal producers have got permission to cut *prosopis* – which only produces low quality charcoal – this might be only an entry point to switch to other species for charcoal production later on. Therefore, it is mostly recommended to remove *prosopis juliflora* from 30 cm below ground and also burn it. The manual removal is also very hard work, since both species are extremely thorny. Others, such as *Parthenium*, contain allergic properties, which lead to skin rashes and eye infections of the ones – mostly women – occupied with the weeding.

The burning of the trees destroys very valuable organic matter, but it is the only currently known way to avoid the return of the weeds. Trials have been made for composting of *Parthenium*, but it could not be fully ensured, that this would fully inhibit its reproduction.

Labor input is very high, and to remove *prosopis* from one ha requires 50 PDs (person days), which lead to costs of about 2000 – 2500 Birr/ha with a daily salary of 50 Birr.

Feasibility:

The strategy of clearing and over-sowing and strengthening general rangeland resilience seems to be as feasible as possible within the portfolio of known technologies and policies, which are currently available on local, national and regional level. At least, in other areas in and around the Awash National Park, *Parthenium* infestations could be reduced through intensive manual labor within three years by as much as of 75% with the gradual return of previously suppressed native grasses.

The initiative of the project to streamline control of invasives with the establishment of enclosures creates high synergies between the goal of invasive control and improving the feeding base and can almost be considered as applying the precautionary principle to prevent reproduction. Also all other interventions for rangeland management conducted under the project enhance the ecological resilience against encroachment of the invasives, since healthy rangeland is less susceptible to encroachment.

Relevance: Encroachment of invasive species is one of the most severe land degradation problems in drylands and is particularly pronounced in Afar region. While a high variety of invasive species has been identified, the most important ones are *Parthenium hysterophorus*, *Prosopis juliflora*, *Acacia nubica* and *mellifera* and *Tribulis terrestris*.

The major harmful impacts of invasives are

- Suppressing native palatable rangeland species through their competitive advantage such as *Chrysopogon aucheri*, *Cynodon dactylon*, *Dactyloctenium aegyptium*, *Aristida adscensionis*, *Panicum coloratum*, leading to a general decline of the available feeding base for livestock,
- negative impact on the environment, such as the depletion of water resources in particular for *Prosopis juliflora*

- toxicity or irritation to animal health, if eaten by livestock, as for instance *Prosopis* . *hysterophorus*, *Calotropis procera* and *Aerva persica* are major causes for bloating, constipation, diarrhea and cough in animals. *Prosopis*, if used as the only animal feed, which can happen during dry seasons, when *Prosopis* fruits are the only available green feed can even lead to undernourishment and starvation of animals due to its high sugar contents, which can lead to the loss of teeth of livestock. *Parthenium* also destroys milk and meat quality by generating a bitter flavour in these products, which can make it impossible to market them.

On political level, the problem has been addressed through Ethiopia's draft National Invasive Species Strategy and Action Plan (NISSAP) on June 2011.

Addressing the expansion of invasive species is therefore highly relevant to maintain the ecological health of rangelands and of livestock and also meets the political requirements on national level.

Recommendation:

Addressing the problem on Regional (HoA) level: Encroachment of rangeland by invasives is a common and also transboundary problem for all over the Horn of Africa and beyond it, but strategies to address the problem on international level are inconsistent, under-researched and under-funded and find hardly political support, as the RBIPMA project emphasizes. It might add substantial value to the management of invasives, if UNDP as an international institution would support the Ethiopian efforts by also tackling control of invasives on international, or at least regional (IGAD) levels through the creation of an international task force to tackle the problem. Partnerships with existing programmes by UNEP, IAS, IUCN might be useful, such as the project "Removing barriers to the control of invasives species (RBIPMA)" by UNEP.

Integration into Early Warning, Rapid Response and National Risk Assessments: As it is already mentioned in the Woreda Adaptation Plan of Ewa, the expansion of invasives should also become part of the early warning systems employed in the project area (compare Result Area 3) and of national risk assessment procedures in line with the requirements of International Plant Protection Convention (IPPC), to which Ethiopia is a signatory. In this context, also **Rapid Response Mechanisms for the Early Detection of and Rapid Response** to new infestations of invasive alien plant species, which were developed in four countries of the over the course of the RBIPMA (Removing Barriers to Invasive Plant Management in Africa) project could also be introduced into the Afar project. For Ethiopia already the guidelines have been prepared.

Supporting general research and innovations on dealing with invasives: Since manual removal is tedious and leads hardly to large-scale removal of infestations, most promising solutions on dealing with invasives can only be expected from research and technological innovations, which urgently should be supported by UNDP. Options are manifold and might reach from thinking about mechanized control over a kind of tolerance by making best use of it.

Political support of biological control research and testing: The introduction of biological agents for controlling *Parthenium* is one of imminent technologies in Ethiopia, and on the EPA website it was already advertised in 2010 that the biological control agent for *Parthenium hysterophorus*, *Zygogramma bicolorata* has been identified and was to be tested. Recourse to biocontrol is expected to reduce substantially the costs of IAS management programmes in Ethiopia and reduce losses in rangeland and cropland, and needs therefore comprehensive political and financial support in research, testing, replication and risk assessment, to avoid that the biological agents become invasive themselves.

3.5. ESTABLISHMENT OF ENCLOSURES AND ROTATIONAL GRAZING FOR IMPROVED LIVESTOCK FEED AND NUTRITION

Another strategy for rangeland management and simultaneous control of invasives is the establishment of enclosures, where improved grass and leguminous plants, suitable as animal feeds, are over-sown over the cleared land plots, which are enclosed by fences. This enhances fodder production in rangelands and consequently also livestock while simultaneously controlling land degradation. Enclosures established within the project Woredas have total sizes between 20 to 50 ha, which is almost equivalent to 5 to 10% of the total palatable rangeland in those Woredas and therefore covered a wide proportion.

Enclosures are protected through by-laws within the current practices of the project, and livestock owners, whose animals have entered enclosed areas, are charged fines between 20 to 50 Birr, depending on the Woreda and the type of the enclosure.

Not everywhere, but frequently rotational grazing is practiced on the enclosures, which is based on a temporary subdivision of the grazing area into a number of enclosures and the successive grazing of these paddocks by animals in a rotation so that not the full enclosure is used simultaneously, which allows better regrowth in the parts of the enclosure which are not grazed

Relevance: Enclosures are an important intervention to reverse land degradation and also to adapt to climate change. As one climate change adaptation plan says: “The prevalence of recurrent drought in the region has forced people to develop enclosure areas that can be used when a drought strikes. The main objective of doing this is to allow natural grass and native vegetation to regenerate as a means of providing fodder and woody biomass, to reduce soil erosion and to enhance rain water infiltration”.

The TerrAfrica document on SLM practices considers enclosures and cut and carry practices as mostly relevant, where only little productive pastures are available and the threats of overusing the land is high, as it is the case in Afar.

Feasibility

Socio-economic feasibility:

If well managed, the intervention can also enhance the connectedness within and between community institutions, but requires the willingness of the regional institution to assist and support organized agro-pastoral groups.

- The technology in its initial stage is very labor intensive, and, depending on the seed and seedlings prices, also expensive, if not supported by a project. While the demand for maintenance in the first year is high, after 2–3 years maintenance costs decrease substantially, as the grass cover closes up and maintenance activities such as replanting and compost application are reduced or cease.

According to the Best SLM-Practices Document by TerrAfrica, the intervention is feasible for land rehabilitation and a transition towards integrated crop-livestock management, and where extensive grazing is to be changed to intensive grazing or silvopastoral grazing. It has therefore a socio-economic component, which is not feasible for nomadic or transhumant pastoralism, but for agro-pastoralism which is intensifying, as it is the case in Afar.

Though not completely the same, modern enclosures are frequently considered as an equivalent to traditional grazing reserves (Desso), which sustain pastoral livestock during dry and drought periods when the support capacity of other rangelands declines. Governance of traditional grazing reserves has been managed by by-laws, where outsiders can use any grazing reserves on the basis of negotiated access. In the region the traditional institutions encourage the community to undertake range enclosures in denuded grazing areas. Maximum productivity is ensured through traditional livestock management and bylaws: Elders normally instruct beneficiaries not to use grass from enclosed areas until full recovery

of vegetation is ensured. Governance practices for the modern enclosures have changed now, since the ones benefitting from the enclosures are the ones who have contributed to their establishment, and enclosures are no more open to outsiders.

Because of the above mentioned implications on the land use systems, enclosures within the commons are frequently considered as an ambivalent issue, because enclosures are also exclosures, therefore requiring to balance the interests of the ones benefitting from the enclosure and the ones excluded from it. This does not apply under the current practices implemented by AIDLMP, on the one hand, because there has been a participatory agreement on the establishment of enclosure, their location and governance with communities before establishment, secondly, as mentioned above, the establishment of enclosures is related to the control of invasive species, therefore, instead of reducing common land through the enclosures, community members in collaborative work are adding grazing areas to communal land, both in terms of space as well as in productivity. An important reason, why project enclosures do not show the above mentioned ambivalence is owed to the fact, that all enclosures are established in agro-pastoral areas. Trade-offs might occur, if the intervention would be replicated in pastoral areas.

Beneficiaries of the enclosures are all members, which have contributed to their establishment.

Technical Impacts and Feasibility

The intervention addresses and prevents soil degradation through wind and water and soil fertility decline and is resilient towards more rains with higher intensity and storms.

The impacts and benefits of enclosures in the way they are practiced in the project are manifold. Their function is de facto to enlarge the area of pasture land and enhancing its productivity, therefore improving livestock productivity for meat and milk production, at the same time protecting soils and soil water by protecting it from erosion and against water losses from evaporation through permanent land coverage. Off-site benefits are reduced sediments which are transported into nearby water resources, therefore also reduced downstream flooding and reduced downstream siltation and in this way increased stream flow in dry season.

The integration of rotational grazing additionally intensifies the productivity of the enclosure and makes the intervention therefore even more feasible.

Recommendations:

- By-laws or community management plans should be re-checked, if they also ensure the generation of maximum productivity in the enclosures, which means incorporating major principles of rotational grazing such as the adjustment of the rotation cycle to ensure a good forage quality, balancing the number of livestock with the grazing productivity within each paddock, reducing the extent of selective grazing by confining a relatively large number of animals to a small portion of the enclosure. Intensity of grazing should be adapted to the climatic conditions: in drier areas recovery periods should be longer due to limited plant recovery potential and high sensitivity to misuse and degradation, assessing appropriate stocking rates by taking into account plant species composition, basal cover, topography and soil erodibility.

3.6. FODDER BANKS AND HAY MAKING

Fodder banks are similar to the above mentioned enclosures, but are established on irrigated land in riverine areas to supplement the feeding base for livestock through a cut-and-carry system or through hay production. Varieties planted are Sudan grass as the most productive grass which can be harvested already after 60 days, furthermore Elephant grass, Panicum, leguminous pulses such as cowpeas and pigeon peas, in some banks also leguminous trees such as Sesbania and Leuceana mainly for fencing.

Fodder banks in the project Woredas vary in size between 2,5 ha in Awra and 10 ha in Chifra. Additionally to the project fodder banks, the government has its own regional fodder banks, which provide feed to the region, but where there is access to irrigation, it is the communities who produce the fodder in the fodder banks and organize the distribution of the fodder. The government also provides seeds to these fodder banks, which are acquired from a company, however, frequently the demand is higher than the supply of available seeds. .

Different from the common governmental procedure, the seeds for the project fodder banks were supplied from the project.

Grasses from the fodder banks are stored as hay, and the project has also promoted and supplied trainings for hay production, and also produced a manual, which was distributed among the beneficiaries.

Feasibility

Technical Feasibility

Fodder banks and hay making are intensified systems of fodder production and have the same benefits as enclosures, such as an enhanced feeding base, higher livestock productivity of milk and meat, therefore higher incomes. The additional value is, that hay making allows supplementary feeding also, when there is a scarcity of feeding base in the rangelands during dry season and other problematic events. It also allows fattening of livestock before marketing

As side-benefits, organic matter increases are highest on irrigated grasslands, therefore the intervention also enhances soil fertility, water and nutrient retention within the catchment and carbon sequestration.

According to the technical committees some fodder banks produced high yields within the first two years, but due to water and precipitation shortages in some areas harvests in the last project year failed, as for instance in Awra.

Socio-Economic Feasibility

In general the technology is economically feasible, since it is implemented in riverine areas. Outside riverine areas, trade-offs in water and land use would have to be considered carefully, since as a general rule, one ha water on irrigated land is equivalent to the water needed for 7 ha non-irrigated rangeland, varying with soil type and vegetation cover. To assess technical feasibility, water productivity of livestock has to be compared to the water productivity for agriculture, to assess, where irrigation achieves highest returns.

Fodder banks make most sense, if the fodder is used either for calves or for calving or lactating cows or for fattening of livestock for end markets. Therefore, if there is not a direct access for the fattened animals to end markets, fodder banks do not make much sense, however, the livestock market in Awra, which will soon be established, is also close to the fodder bank there, hence the linkage has been established.

The technology implies rather sedentary land use systems, therefore can only be up-scaled in agro-pastoralist areas.

Recommendations:

Up-scaling of fodder banks to other Kebeles is certainly possible, where sufficient land and water resources are available.

Seed Production : To upgrade the project, it is recommended, that a future phase would also support seed and seedling production to support the government in filling this gap. Experience has shown, that this can be better done on a private basis by some skilful and interested individuals rather than as a communal effort. Before that, a gap analysis on seeds and seedlings needed should be conducted, which also will require to assess the feasible area for up-scaling.

The system has also high demands on **soil productivity**: therefore either high fertilizer or manure application is necessary, however, enhanced milk production compensates for the high input costs, so that the final returns for livestock production are increasing. **Night-coralling** might also be feasible to fertilize fodder banks.

Cost of benefits of supplementary feeding by Save the Children was assessed to be 1.6 : 1 in comparison to non-supplementary feeding. In this sense, normally supplementary feeding is highly economically feasible, but varying very much on the production cost for the supplementary feed. Therefore, costs and benefits of the hay-making technology should be carefully compared with other options of supplementary feeding, if there are any.

3.7. RANGELAND CONSERVATION AND GRAZING MANAGEMENT

The project has provided trainings on **shifting grazing** to maintain or revitalize this traditional rangeland and livestock management practice. Additionally, together with the Bureau of Livestock, the project is encouraging **destocking** of livestock herds to adjust herd sizes to declining pastures. By their nature, these activities could not be observed during the short consultation time, but technical committees confirmed that shifting grazing was practiced, though destocking activities would rather be in their infancy.

Relevance and Feasibility

Adjusting the feed consumption of livestock to pasture availability through the regulation of livestock mobility is one of the most traditional rangeland management strategies of pastoralists and under the erratic weather and vegetation conditions it is also one of the most feasible options to conserve rangeland and at the same time optimizing livestock yields. While it is indeed true, that a reducing livestock numbers is necessary with a declining natural resource, recommendations for de-stocking frequently do not take into account that mobile pastoralism requires a minimum herd size, below which mobile pastoralism and therefore shifting grazing is no more possible. De-stocking promotes therefore trends towards higher sedentarism.

The other question to be solved is about opportunistic grazing versus controlled grazing, which has scientifically nor traditionally not yet been answered. While on the one hand the declining carrying capacity has to be taken into account, livestock productivity of opportunistic grazing is mostly higher than for controlled grazing under the erratic conditions in the region.

Besides these concerns, it is very feasible, that the project is complementing rangeland management by various measures on moisture conservation through the soil and water conservation structures to retain water on rangelands, as highlighted above.

Recommendation: A special project could address the grazing management through mobility. Also modernized mobility should be addressed, taking into account also livestock trucking etc..

3.8. IRRIGATION SCHEMES

The project rehabilitates existing and expands new irrigation schemes in Chifra and in Awra.

The irrigation scheme in Chifra is actually the expansion and restoration of an older irrigation scheme which was started earlier by the Lutheran World Federation. About 30 ha of that irrigation scheme are still in function until today. The remaining area was no more maintained after the funding for the irrigation scheme had stopped, but a channel to the fields and a diversion scheme was still remaining, which has been rehabilitated by the project, so that currently a total area of 150 ha is irrigated, benefitting about 108 households, which have access to land sizes between 0.5- 2.0 ha land, mainly for maize and fruit tree cultivation.

The project integrates also riverbank stabilization measures through the establishment of various gabions, where former structures along the riverbank were eroded. The financial document reports, that 122 gabion boxes were procured for this purposes. Irrigation channels along the rivers were stabilized with concrete. In some parts of the channel clay soils are dominant, so that the channel walls were considered as stable enough not to erode or collapse and therefore not covered by concrete, but farmers said, it would be preferable, if all channel walls would be stabilized with concrete in the near future. Conveyance and distribution in the field is well managed through lined canals and piping systems.



Awra irrigation scheme. Photo : Ingrid

In Awra the project is restoring the irrigation scheme of the NGO SSD on 50 ha within the Kebeles Hida, Lekura, Lekuma and Aliberimeskid. 120 ha are expected to be additionally irrigated, serving 200 beneficiaries in total with a canal network of 6 km. The whole irrigation network work is finished already, only some adjustments in the common area need to be made. The river has water throughout the year, but there are no river gauges installed to measure the water tables, and this is also not foreseen in future.

The project costs for irrigation are 2.2 million ETB, out of which EPLUA transferred 528 thousand birr to the Regional Water Bureau account.

Community Involvement

Farmers groups – 2 groups of about 10 to 20 farmers - were engaged for one month in restoration of irrigation scheme. As they are the beneficiaries of the project, they were not paid salaries, but only received daily meals for their work, which shows their high commitment and confidence, that this work will benefit them in future.

Furthermore the intervention was accompanied by the establishment of irrigation associations, who also were trained in irrigation management and maintenance, with representatives from each Kebele.

Relevance

Although endowment with water resources of the area is very high, these have not been substantially developed up to now. Any activity for water development is therefore highly relevant.

Even for the ones developed, water capacities have decreased over the past 5 –10 years, according to community due to the erratic rainfall distribution and temperature variability, resulting in water stress for human and livestock consumption, and decline of cropland, rangeland and livestock productivity. This all emphasizes the high need for water development in the Region.

The irrigation scheme itself can improve food availability for all beneficiaries through increased land productivity and intensification. It also allows the diversification of the land use system towards agriculture, which strengthens the resilience to changes, might they be induced by climate, markets or policies.

Feasibility

Technical Feasibility

Rehabilitation: One of the main feasible features of the irrigation project is that it rehabilitates abandoned irrigation structures rather than only building new ones.

Vulnerability of the scheme : The Awra climate change adaptation plan analyzes in detail, why former irrigation schemes were abandoned, and how it could be avoided, the the same problems - in future. The major earlier problems were for Hida, Lekura, Lekuma and Aliberimeskid Kebeles :

- damage of canals by flooding and through animals
- design of the canals
- mis-management of irrigation
- siltation and other related problem

The project has addressed the problem by taking a catchment approach in protecting the river from siltation. It has also established and trained irrigation committees in appropriate management. In particular the project is supporting the rehabilitation of canals and other structures. The Awra technical committee welcomed this support by the project very much, highlighting that communities themselves were overwhelmed by maintenance work which becomes necessary every year. Nevertheless, the technical staff still expressed great concerns about the technical stability of the scheme, mentioning that huge structures are destroyed by floods every summer, again highlighting the important role of the project to support communities, which are not able to afford the maintenance costs of the structures.

Data availability and Information basis: The irrigation potential of the river and irrigation requirements are not really known to the Woreda Technical Committees, but a study group from Semera University had obviously confirmed, that the water potential of the river would be sufficient for the 120 ha additional irrigation land. In general, small-scale irrigation projects at the foot of the Awash are expected to receive sufficient water to make the project feasible.

Nevertheless, during the field consultation it was observed, that none of the responsible persons, neither in EPA, nor in the Bureau of Water or EPLUA in Afar was in hold of any basic hydrological data for the irrigation scheme, therefore, nobody was able to make informed decisions on the schemes. This situation itself is not acceptable, in particular, if an up-scaling of the project is planned, therefore, as long as the responsible persons are not in hold of the necessary data to approve it on an informed basis, the endeavour cannot be considered as feasible in the current situation, in particular, since the climate adaptation plan for the region itself says, that « *Water resources are also difficult to manage, as for instance, in Awash the water resources are highly vulnerable to climate variability, especially in the distribution of runoff throughout the year. It has been indicated that the Awash river flow will be affected by climate change because of the uncertainty about rainfall patterns in the basin and the influence of complex water management and water governance structures.* » With the current stage of data basis, there is no justice done to the high uncertainty about possible variations of the Awash river flow.

While there is not only a need for hydrological data, for up-scaling there is furthermore a need for land data, to match irrigation with high-land quality, also on additionally required labor and agricultural inputs.

Socio-economic feasibility:

Socio-Economic implications between irrigation and villagization: The irrigation project enhances the available area for food crops and therefore enhances food supplies. The intervention is also accompanied by a villagization programme, where community members are settled around the irrigated land. This means, that up-scaling is related to the willingness of stakeholders to settle near the irrigated areas, which seems to be rather likely for agro-pastoralists, for whom the schemes are established, but less likely for transhumant or nomadic pastoralists, although there are some similarities in the character of pastoralism and irrigation which are more deeply described below.

All Kebeles with access to irrigation try to up-scale the intervention. While this might not yet affect the current small scale of the intervention, **further up-scaling** would also have to ensure that trade-offs between irrigation agricultural and transhumant and nomadic pastoralism are avoided already during the planning stage, since already many conflicts in Afar were created where larger irrigation schemes had been established on pastoral lands.



Irrigation in Chifra.. Photos : Ingrid

Recommendations :

Obtaining data and information: All authorities responsible for irrigation development in the project area should first try to obtain the necessary hydrological data and information before the project is started.

Data are also required for assessing trade-offs on land and water productivity, since currently there is no information, for which crops irrigation water is used most productively. In many cases, livestock production is more profitable than irrigated crops.

Integration of irrigation agriculture into a regional water development plan: To optimize water development which avoids or limits all occurring trade-offs, the project should be integrated into a

regional water management plan. The water management plan should include all visions towards future water development and possible trade-offs to be expected and to be avoided, based both on participatory planning methods with communities as well as on modern hydrological mapping tools and their findings. The plan should in particular balance water, livestock and pasture resources, since if there are pastures where water resources are not sufficiently developed, this might lead to an underutilization of pastures and therefore to sub-optimal livestock production. The plan should focus on a multiple water use system rather than on single uses like irrigation and cover all activities and required assets starting from the water sources where water is withdrawn up to the water bottles which are used – and frequently lacking – to collect the water. For irrigation, the plan should also compare costs and benefits of different irrigation schemes in terms of monetary and water productivity compared to other land uses. The plan should also include measures to avoid salinization of land and alternative land use plans, in case irrigated land is abandoned.

Additionally, **land use policies** for pastoral areas should limit the conversion of watershed based dry season pasture to farmlands and ban the establishment of year round water facilities in traditional wet season grazing areas.

4. LIVELIHOOD INTERVENTIONS

4.1. TRAININGS

Training activities in all project relevant activities were given to all responsible staff of the project, mostly accompanied by related training materials or manuals established by the project staff

Major training activities were :

- Monitoring and evaluation to Woreda and Regional staff given by PCU
- Training on integrated vector management by community health workers
- Training on management and maintenance of solar panels for the respective beneficiaries in collaboration with Semera University.

Another training section was devoted to the development of professional and marketable skills and knowledge in collaboration with the Regional Micro Enterprise Development Agency. After a need assessment in the 5 project Woredas, an agreement was made with Lucy TEVET College to provide training on identified skills for identified trainees.

At regional level, different trainings were given to the trainers in rangeland management. On Woreda level, for soil and water conservation communities were shown degraded areas compared to rehabilitated areas, and communities were informed, which activities were to be conducted to rehabilitate the land accordingly.

Relevance, Feasibility and Sustainability

Due to language constraints, the evaluator was unable to review the training materials. Interviews with Technical Committee proved their high satisfaction with all trainings provided by the project..

The trainings ensure also the **sustainability** of the interventions.

4.2. SOLAR PANELS FOR HEALTH AND EDUCATION

The installation of solar panels is part of the climate change adaptation plans, since climatic changes contribute to power outages, since reliance on hydrogeneration is affected by droughts, and also floods and storms affect the energy infrastructure. Besides the mentioned value of electrical power supply, of course the value of the project lies in the renewable nature of the energy source itself.

4.2.1. ENERGY-COLD-CHAIN IN THE HEALTH SECTOR

The project area is facing a lack of medicines or has to deal with expired medicines due to a lack of cooling facilities for medicine and vaccines. To fill this gap, the project provided a solar-driven cold chain for medical purposes, based on the provision of solar panels with a performance of 160 kWh and a voltage of 1300 Volt. The demand for this technology was very high, therefore, in the project design phase, the number of solar panels was even increased from an initially targeted number of 10 to 18. The provider was selected during a bidding procedure, but was changed during the project, now it is Green Power Africa, before it was Power Green Solution, both companies are based in Addis.

Additionally to the cold chain establishment, the project has given trainings to community health workers to improve vector management and procured them with the respective drugs.

Relevance: The uninterrupted refrigeration of vaccines is vital, and maintaining the required cold chain from the manufacturer to the child is an enormous challenge in communities off the main grid or with intermittent electrical supply. Weak links in a system can result in the loss of millions of doses of vaccines.

Health Impacts: Health benefits of the cold chain are high. The number of women who died during delivery could be substantially reduced through the project intervention, as community members and technical committees confirmed. Also mothers and infants can get now vaccines in the Kebele. Before the project was put in place, they had to go to the next town

Therefore, the intervention is highly relevant.

Feasibility

Installation and Maintenance

All solar panels were installed according to plan, cables and connections between the solar panels and the electric devices were functioning in all Woredas visited during the field consultation and the system ensures that vaccines are kept at the proper temperature in the locations where they are administered.

Technical Problems

Internally the electric connection within one Health Centre had been interrupted and all vaccines had been transported to Deyratu.

In Awra, the Technical Committee reported, that one solar panel had been out of service for almost 8 months. The problem was, that the company which supplies the panels, had delivered low quality batteries and still had not replaced them yet, although there was a guarantee on it. For the meantime, the community is using kerosene absorption refrigerators, for which it is, however, almost impossible to maintain the required temperature between +2 and +8°C, putting the freeze sensitive vaccines at a risks.

Solar panels are therefore a better technical solution, both for guaranteeing constant temperatures and reduce carbon emissions. However, solar panels are very expensive and are using lead-acid batteries, which need to be replaced every 5 – 7 years.

Recommendations

Vertical integration: As an integrated UN project, the project could also support and demonstrate the improvement of vertical integration, therefore besides the provisioning of the solar panels, the project could check the links and weaknesses from the manufacturer to the child.

Alternative technical solutions: The project could also check other technical solutions to **replace lead batteries**, as for instance UNICEF is now using ice bank batteries.

Alternative Funding options: Solar panels are quite expensive despite the recent tax reductions by the GoE.. Though the investment is justifiable due to its high added value, alternative funding options might possibly be identified, which might relieve the pressure on development funds. Such alternative funding opportunities might be public-private partnerships The identification of climate related funds should also be an option, which might leave UNDP budgets completely untouched.

Collaboration with Vet-Services for Vector management: For the future, the identification of animals drugs required for vector management could be outsourced to the veterinarian services, who might be able to integrate such activities more efficiently and have the higher expertise.



From left to right, top down: Solar panel at health point, solar light in school, women taking afternoon classes, refrigerator for vaccines using solar power. Photos: Ingrid

4.2.2. ENERGY-LIGHT AND COMMUNICATION CHAIN FOR EDUCATION SECTOR

The same type of solar panels are also used for the electrification of schools which allows to give evening classes to adult pastoralists, who have to work during day time, therefore the intervention not only demonstrates the feasibility of solar energy, but also substantially supports adult education. On an average one evening class of about 50 adult students can be educated additionally due to the electricity supply by the project. Electricity generated by the solar panels in schools is also used for charging mobile phones, and schools in return charge fees for this service from the mobile owner, so that schools have now also the opportunity to generate some incomes from the solar panels.

The intervention in schools is therefore **highly relevant, feasible and sustainable**.

4.3. WATER DEVELOPMENT

Higher temperatures and increased evaporation enhance also water demand of humans, animals and vegetation. The increased demand in water consumption can be attributed both to increase of temperature levels and wind speeds on the one hand and the changing lifestyles of pastoralists and livestock management on the other.

The lack of safe water resources has forced pastoral and agro-pastoral communities to use poor qualities of water for their consumption, which increases water born diseases in the Woreda and water demand for crop and vegetable production, humans and livestock.



4.3.1. HAND-PUMPS AND HAND-DUG WELLS

To address the problem, the project has installed hand-dug wells, hand pumps and watering troughs for animals to its target Kebeles. Available water supplies closer to their homesteads saved women walks of about 2 – 4 hours a day, carrying 25 l water. Moreover, through the hand pumps the separation of human and livestock water consumption could be better controlled, and in this way hygienic conditions could be substantially improved. Womens' groups interviewed, reported about substantial decrease of diarrhea and other water-borne diseases in their families.

Wells, could not be everywhere installed near the homestead of women for technical reasons, as for instance in Mile, because it would have required much deeper drilling than would have been possible with the hand-dug technologies. Therefore, some of the wells were located near water resources (rivers) themselves, such as in Mille and in Awra.

Water Supply Problems:

The well in Ewa, which reached to a depth of 30 m, had fallen dry due to high demand and therefore high pressure on the well. This was not due to a failure of the design of the well or the pump, but on the contrary, due to failures of all other water resources around, so that water consumers concentrated all around the hand-dug well of UNDP, the only functioning water point in the area. This was leading to a situation that the well fell dry outside the morning hours, and some women had come in vain to collect water. The shallow well in Ewa is 30 m deep and has a potential to supply 250 households with water. It was said that too many people came from Buli, as there was no water, since a mechanized deep drilled well had failed to supply water due to mechanical problems.



Ewa women looking in vain for water in well which has fallen dry. Photo : Ingrid

The focal point in Awra reported on another hand pump, which stopped giving service because it had not been properly used. A new one is now under construction.

The water well visited in Awra was surrounded by many watering points for animals from other organizations. Nevertheless, the hand pump had added value, because it allowed to separate water for human consumption from consumption by animals.

Relevance and Feasibility

Filling a genuine need for safe water nearby: The observations in the Kebeles visited show that on the one hand the wells, pumps and troughs provided by the project filled a genuine need of all communities who benefited from the installations for safe water closer to their homesteads. However, it also highlighted that additionally a water management plan on Kebele and Woreda levels would have been beneficial both for planning the locations as well as for structuring the use of the water resources.

Lack of feasible water management : Although there are water use committees in each Kebele, there was not the impression that there was a feasible water management plan, which regulated water withdrawal by humans and livestock during times, when demand is high. As for instance, there was no plan in Ewa, at least no one which became evident during the consultations, where communities could access alternative water resources under the very critical situation that the only functioning well in the area – the one provided by UNDP - had fallen dry, while all other deeper wells were not yet delivering.

Also, community members reported that livestock was crowding around some of the wells, a problem which could also be solved through improved water use management. This will need particular consideration of livestock herds which come from more remote areas. Around other wells, where communities had their own routine management, such as in Mille, where livestock got hand-pumped water in the mornings and the evenings, there was no crowding around the pump.

Recommendations :

Up-scaling : In general there is clearly a demand for more hand pumps even in the Kebeles where these pumps are already existing, and the more in other Woredas. But for the future, the project needs to reflect, if hand-dug wells are really the appropriate technology under geological conditions, where the basement is hardly penetrable and therefore sufficient depths are difficult to reach by hand-digging, particularly since experience has shown, that hand-digging wells tend to fall dry at least during dry seasons.

Introduction of water management plans on community level : Water management plans could be established in participatory way with communities, which regulate water access under conditions of pressure and also include the use of « outsiders », such as pastoralists, who only occasionally and irregularly use the water points. For times and places of water scarcity, the plans might also contain water budgeting etc..

Considering establishment of deep wells : Finally, it could be considered, if shallow hand-dug wells are really the best option, and if not deeper, mechanically drilled wells would be more feasible, regarding the fact, that hand-dug wells tend to fall dry during the dry seasons, when they are mostly needed.

4.3.2. ROOF WATER HARVESTING

Nine schools were provided with water tanks of 3000 l capacity for roof water harvesting for seedling production and provision of drinking water.

There was no water in the tanks during the field consultation, because it was the dry season. According to some teachers, the water harvested was rather intended to be used for irrigating plants around the school compound than as drinking water. In some places the tanks provided by UNDP were not the only ones and the schools had also other water containers, in other places such as in Mille, there was even a pressure on that single water tank provided by the project, which was inbetween used as a container during the construction of a Mosque, indicating that just the supply of the tanks created synergies with other purposes



Rain Water Harvesting in school and health centre. Photo. Ingrid

Feasibility and Relevance

Socio-economic

Since there is also a relationship between drop-outs from school and water scarcity, in particular during Meskerem and T'kmt, water provision in schools can be important to prevent drop-outs due to droughts., although it is doubtful, that the project could in particular cater for this, since the water-harvesting technology does also not yield water in the dry season, but can store it for some weeks.

Technical

Roof water harvesting currently takes place just on one side of the roof, and could be extended to two sides of the roof. Also here a management plan would be beneficial.

Potential for up-scaling: As for the solar panels, installing the technology in public buildings had also the aim of demonstration effects. Due to the investment costs, up-scaling will most likely not be possible on farmers' level, but on other public buildings within the project area.

4.4. LIVESTOCK MARKET



Livestock Market Centre in Awra. Photos : Ingrid

Previously, the nearest market accessed by communities was the livestock market in Hara, which is neighboring Amhara region. However, serious conflicts between 2004 to 2009 made it impossible for the district community to access that market. While these conflicts have been mitigated by now, raiding of camels still continues in some cases. Another market was established by end of 2009 in Alele Subla by SC UK as a pillar project in collaboration with Islamic Relief and the district, but this is still in its infant stage. Therefore, Chifra district livestock market centre is currently the nearest functioning market place to sell all types of livestock, but it is small and still too far to be reached by Ewa and Awra communities.

To provide an additional market centre, which is nearer to reach from Ewa and Awra, the project therefore established a market centre in Awra. The market was initially meant as a secondary market, but now the project improved the facilities to upgrade it to primary level where all types of livestock can be marketed. This requires certain standards, such as the availability of shade, water and a taxing office. Up to now, not all these requirements are fulfilled, because the project was lacking money, but water troughs and a tax office are provided. For the finalization of the effort it is now expected that the community will cater for the remaining issues, which is mainly to establish a roof for shade.

Relevance

Pastoralism entails high marketing and transaction costs because of the general poor infrastructure, long distances to markets and related high transport costs, lack of adequate market information and financial services. This leads to a low involvement of herders, in particular camel herders, into the cash economy, so that most camel herders only sell livestock to pay for their basic needs, e.g. medical care, veterinary services, food staples, household items and ceremonies. Lack of marketing facilities therefore indirectly encourages the maintenance of high livestock numbers.

Absence of functioning markets furthermore disables emergency sales, which become necessary, when particularly during droughts the carrying capacity of pastures despite appropriate grazing rotation is inadequate to sustain livestock herds, so that pastoralists have to sell animals to achieve at least minimum prices, rather than facing total losses. The absence of opportunities for emergency sales under these conditions deteriorates pastoral livelihoods.

The establishment of market opportunities for livestock, where markets are far and require long trekking distances is therefore very relevant.

The intervention by the project, to establish a livestock market in Awra, is therefore well taken to fill the current gap in marketing and to stimulate pastoral production as well. The location is also suitable, because Awra is a grazing centre with rich pastures, which is used by many herders, so fattening of animals before marketing is also possible.

Feasibility

The intervention by the project to establish a livestock market in Awra is important to fill the current gap in pastoral infrastructure and to stimulate pastoral production as well.

The **location** is also suitable, because Awra is a grazing centre with rich pastures, which is used by many herders, and can also ensure appropriate fattening of livestock before marketing. To support fattening, the project has also distributed veterinary kits to households and trained how to use them.

The livestock market will **save long-distance trekking of livestock** on foot of up to 50 km to the other alternative markets in Mille or Chifra etc. for livestock herders, which saves time and energy, and therefore also feeding materials. It also has therefore many advantages in avoiding animal weight losses and contributing to their health, which has also positive impacts on the final prices.

In addition, the nearer market can also **enhance the bargaining power** of pastoralists over the price of their animals, as it allows them to take back their animals, if the prices are not reasonable or to offer them on the alternative market.

Benefitting communities: Besides the targeted Woredas Ewa and Awra, also other Woredas in the nearer surroundings are expected to trade their livestock here. Therefore, the project targets a lot of potential beneficiaries

It was beyond the capacities of the evaluation to prove, if communities would really be ready and capable **to finance the finalization of the market centre**. While of course due to the high relevance of the centre a certain commitment by communities can be expected, it is difficult to assess, if there are not more urgent needs to fill by the tense budget of communities.

Recommendation

According to the field consultations, some **pastoralists** try to feed some selected species of goats and sheep with cuttings of forage tree and certain palatable animal feed separately for fattening, however, this has not yet been integrated into a systematic procedure, which is recommendable for the future.

It is furthermore envisioned in the Awra Woreda climate change adaptation plan, that “ *Animal transporting system and market price information systems will be put in place. Efforts will be made to integrate pastoralists with **domestic investors undertaking fattening practices, abattoirs, and traders, as well as to make them organized in cooperatives** in order to solve their marketing problems in an organized way. In addition to these, support will be rendered for private investors to invest on slaughter houses in pastoral areas, as well the government to build quarantine stations that meet the required standards* ». All this is recommended to follow-up in the future. In particular the recommended market cooperatives or sales groups can help establishing new institutional settings, where sales can happen in groups instead of individual trekking of animals to markets.

4.5. ALTERNATIVE CONSTRUCTION MATERIALS



Teachers using cheka house as tea kitchen. Photo : Ingrid

Most buildings in Afar are constructed from wood poles, which are arranged in a way that allows maximum ventilation. Though these wood poles used for house construction are recycled whenever an old house breaks down, still the pressure on wood resources for house construction in the area is high.

To reduce this pressure, the project is demonstrating a technology to build houses from sun-dried bricks, from which the project has constructed in each of its Woredas a house to demonstrate alternative construction methods which do not require wood. The houses have a dimension of about 8 m² with about 3 m height with a wooden door and are usually located near schools, where the demonstration effect is highest.

The project has also trained community members in producing the bricks from local clay which is available in almost all soils, which is mixed with grass and fermented, and in constructing houses from this mixture, both techniques which can be easily learned and therefore replicated.

During the field consultation, out of the mud houses visited, one was used as a tea kitchen by school teachers, who were also seeking shade and cooling there, another one is planned to be used as a teacher's house. The other cheka houses were not used.

Relevance

The climate adaptation plans refer also to the reduced stability of buildings due to increased temperature and solar radiation, which reduces the life span of buildings and facility elements due to temperature expansion and materials breakdown of concrete joints, steel, and asphalt, increasing also the maintenance costs or leading to potential structural failure during extreme events. Furthermore, there is a high pressure in the area on wood resources. Even although poles are recycled, it is relevant to find alternative construction methods, which spare wood resources and are resistant to heat, increasing storms and erratic rains.

Feasibility

Technical feasibility

Technically, the construction of houses from cheka and grass is a very feasible alternative. The technology is also traditionally used in Dewe for long, therefore, has proven also its resistance to extreme climatic events.

Socio-economic feasibility

The location to demonstrate the technology near public buildings is well taken. However, apart from the fact, that the technology is also used in Dewe, during the field consultation there was not much evidence that communities tried to replicate the construction. However, the construction had only recently been finished, nevertheless, up to now also not the local cheka houses in Dawe were replicated elsewhere. Nevertheless, on Woreda level the technical committees had already envisioned to use the cheka technology for the construction of houses around the irrigation areas near Awra and Ewa for the villagization programmes, therefore, adoption and up-scaling has been successful on a certain level. .

Recommendation: People do not necessarily adopt a technology just because it is environmentally friendly, particularly not for housing, if they have been used to other modes of housing all their lives.

For raising more interest into the clay technology, it might be recommendable to show other, more attractive designs than the current small mud houses show, which only demonstrate the technology, but no amenities. It might therefore more feasible to build houses which have the common size of other houses people live in.

Furthermore, before building houses on large scales within villagization programmes, SWOT analyses should be conducted among people, who have already built such houses or have lived in there, and how they perceived it compared to the common houses, in terms of temperature, shade, amenity value, attractivity, replicability of the technology, stability of bricks etc, differences in soils with respect to brick quality etc., so that there would already be more experience to build upon when replicated on a larger scale.

4.6. COOPERATIVES

Cooperatives were founded for carpentry, masonry and plumbing in collaboration with the Bureau for Cooperatives in Semera, which also supported the project through the provision of trainings in cooperative marketing and management, auditing and accounting. The Bureau also catered for the establishment of saving and credit organizations as well as the irrigation user associations mentioned above.

The amount of contribution of the members of the project cooperatives depends on their potentials, and the different underlying business plans. For initial registration between 200 – 300 Birr were charged, later on contributions between 42 – 112 Birr are required, for which the project provided seed money.

Criteria for the type of support given is based on the interest of the association members. Usually their first interest is to get inputs for marketing. The ones who have irrigation land need extension.

Through the associations irrigation farmers can reduce transportation costs, since they can organize their transportation in groups and they can also enhance their bargaining power. Moreover the support lies in the supply of different types of materials for irrigation, the water pump hand tools.

Feasibility

The social settings of pastoral communities provide good enabling conditions for the establishment of community cooperatives, since the spirit of cooperative matches well with the social structures of pastoralism.

On the other hand, there are a lot of difficulties to overcome to make cooperative sustainable, above all the shortage of money, which directly leads into logistical problems, as for instance, there are no vehicles, offices are lacking facilities etc..

Mobility in pastoral societies impedes also regular participation of all members in meetings. Unemployment and lack of skills are further problems. « *If the different committee members, the management committee, the purchasing committee, and all elected members of the general assembly are all unemployed and too, unskilled, it is difficult to run the cooperatives in an efficient way.* » was said by the interviewed staff of the Bureau of Cooperatives. If there are not even basic skills, cooperatives are even unable to absorb the support given to them, a sustainability threat, which is partly offset by the project, but needs further to be addressed in future, since the problem of skill-gap remains.

Some associations disappear after some time, because they would need more support than they can receive or absorb. It is suggested that projects should cater for their continuous support and scaling up, once they have been established.

Recommendations :

The Bureau of Cooperatives recommended to the project to expand its scope within the Woredas the project is working in and also to other Woredas. There should be a SWOT analysis conducted about the present achievements until to date, and based on lessons learnt the work should be up-scaled.

4.7. CREDIT AND SAVING ORGANIZATIONS

Credit and Saving organizations were established, because there are not yet any banking services established who would cater for this. The maximum amount to be given as a credit is 5000 Birr. Much of the credit is invested into livestock trade. The percentage of women receiving the credit is very high. The project has supported this through the contribution of seed money.

Feasibility : The feasibility of saving and credit associations is assessed by the Bureau for Cooperations in Semera, the government conducts its own assessment, too.

For the establishment of a cooperation the pre-requirement is to have certain capital for investment first, secondly it needs an office for the overall support. After feasibility is proven, the Bureau supports also the cooperative in establishing a work plan, then assembles the community to aware them about the possible benefits of the association and will be asked to contribute their share, if they are interested to participate in the cooperative.

Recommendation : Since only wealthier segments of the society are able to save, or at least to save more, the intervention disadvantages, if not excludes, poorer groups and individuals. According to information of the Bureau, even the membership fee of 200 Birr is frequently an entry barrier for the poorest segments of society. This could be overcome through the provision of a revolving community fund. Up to now, this has not yet been established, because earlier experience has shown, that repayment rate was low, not higher than 30%. However, this is a problem of lack of resilience, which the project should rather try to address than to avoid, similar to a degraded rangeland. Solutions, which have been successful in other countries, as for instance in the BDR project in Uganda, have been to align the repayment with incentives or penalties for environmental activities which are part of the by-laws.

4.8. ALTERNATIVE LIVELIHOODS

For the creation of alternative livelihoods, women and youth groups received trainings in business skills, particularly the members of saving associations as well as in marketing methods and benefit sharing in collaboration with the Regional Cooperative Promotion and Development Office.

5. COMMUNICATION, INFORMATION, DISSEMINATION AND AWARENESS RAISING

5.1. EXPERIENCE SHARING VISITS

Experience sharing visits have taken place to degraded areas in Amhara region, which had been rehabilitated and also to places where livestock production was controlled. One of the major take-home message was, that livestock productivity cannot be enhanced by increasing herd sizes, if the fodder base is poor, but by reducing them.

Experience sharing visits on project management level were undertaken to visit the **UNDP cattle corridor project in Uganda**. The Ugandan project has to show many activities, in particular conservation agriculture, however, the ecological conditions in Uganda are much more humid and biomass productivity is substantially higher in the Ugandan places visited than in Afar, therefore only some activities were suggested by the project team to be replicated in Afar, which were in particular night kraaling and jackfruit production. The project team was also interested into the ongoing termite research and biological control project in Uganda.



Left : Ugandan Cattle Corridor Team with Midterm Evaluators (Photo : Ingrid). Right : Bus ready for experience sharing visit. (Photo : Assefa)

The visiting team showed also interest into the bottom-up approach taken by the Ugandan cattle-corridor project.

Relevance and Feasibility

The experience sharing visits were very necessary to demonstrate some important measures which the project replicated in Afar.

Recommendations :

- ***Encouraging the introduction of Night Corraling (Kraaling)***: Night corraling is feasible both for farmland, particularly irrigated land or for intensive fodder production. The practice is also common in Niger as well as in South West Ethiopia in the Enset-based farming systems and also recommended in the TerrAfrica Best SLM Practices Document: Animals and corralls (fenced enclosures) are moved to a new spot within the enclosure every 4-5 nights to homogenously manure fields. Adequate spacing of animals helps to homogenously distribute the manure on the field: in cattle this is ensured through tying the animals to poles, in sheep and goats a movable fence serving as night enclosure helps to save labor. Ideal is a rate of 2.5 tonnes of faecal dry matter per hectare. The application of this amount results in superior grain yields (millet, sorghum) as compared to an un-manured field. High yield response is achieved in the cropping season directly following the corraling (year 1) and in the subsequent two to three years, in which no new deposit of faeces and urine, i.e. no further corraling, is needed. While a 250 kg cow deposits about 1 kg of manure dry matter per night, 7 sheep or 7 goats are needed to produce this same amount. Thus, to cover 1 hectare of land with 2.5 tonnes of manure, a herd of 15 cattle would need to be corralled during 167 nights; alternatively 178 nights would be needed if 70 small ruminants were corralled. Where herds are smaller than 15 cattle (or 70 small ruminants) and fields are larger than 1 hectare, it is recommended to organise corraling of fields within a community of farmers, or to make contracts with trans-humant pastoralists for corraling. The technology is appropriate for semi-arid and subhumid areas on sandy / loamy plains with low soil organic matter content, low soil pH, and with slopes below 5%. The technology has low knowledge and labor requirements. The technique is similar to the practices which is traditionally used on enclosures of rangeland, where also livestock continuously grazes and leaves its manure for a certain time. Therefore, trade-offs can occur with nutrient demands on pastures. Before introducing this technology it needs therefore carefully to be assessed, on which type of land – pasture (enclosures on rangeland) or cropland – the returns from manuring is highest.

The technique has also some short-comings, as since fencing is temporary, it might require the use of poles, which would increase the pressure on wood resources. However, other traditional fencing materials like acacia branches might possibly be used to substitute poles and also the traditional habit of recycling poles can be applied. The technology also is labor intensive in the year, when corraling is practiced. To establish corraling relations between agro-pastoralists and trans-humant farmers might also be a difficulty, as more and more crop residues are harvested and stored at the homestead and therefore less dry season feed for mobile herds is available, but it is also worth to conduct extensive consultation and coordination with the transhumant community to establish win-win solutions.

5.2. EARLY WARNING SYSTEMS (EWS)

Early warning systems are important to secure the livelihoods of dryland communities in the face of disasters. Two of the five Woreda Climate Adaptation plans complain about the narrow focus of existing early warning systems and their disfunctionality in Afar. The strengthening of EWS is therefore a very relevant intervention.

The project has addressed some of these problems by giving trainings to strengthen early warning system in collaboration with the Regional Disaster Prevention and Food Security Program Coordination office for 50 members of Early Warning Committees of the Woredas. The training was focused mainly on how to improve information communication linkages horizontally among line bureaus and vertically from Kebele to Woreda and Regional offices. It also focussed on the integration and revitalization of traditional early warning systems.

Feasibility and Relevance

In general, the overall structure of existing early warning systems looked properly and well elaborated. It was also appreciated by Save the Children, who had also contributed to its development. The system is following a bottom up-approach, where each Kebele reports monthly on certain indicators, such as water and pasture availability, extreme events, school drop-outs, market prices, etc.. Ideally, these reports are sent to the Woreda, which collects them and reports them to the Regional level. However, in practice, indeed there is a lack of reporting skills and communication in particular on Kebele level, as

emphasized in the Woreda Climate Adaptation Plans and was also confirmed in interviews with Line Bureaus.

The project has therefore filled an important gap, in improving communications in horizontal and vertical direction.

However, still the very fragile communication system in the region, mobile network and internet connections are too unstable to communicate warnings timely, when necessary.

Effectiveness

In particular under the condition of the above mentioned weaknesses of modern EWS, the maintenance and revitalization of traditional EWS is critical. In fact, the recent Somali famine was attributed by many communities to a replacement of functioning traditional EWS by disfunctional modern EWS. However, during the evaluation, the nature of these traditional EWS which were to be re-introduced could not really be identified. As for instance, it could not be proven that the use of traditional indicators, such as the behaviour of flora or fauna, or the major traditional institution for EWS, the Eddos, local scouts, were revitalized for early warning. It is therefore doubtful, if the revitalization of traditional EWS has really been successful in the project. This might also due to the little time budgeted for this intervention, which is very complex and requires the revitalization of institutions, which have mainly been eroded by now.

It was also striking during the field consultations that for instance the early warning system for hydrological drought was not real functioning as mentioned above for Ewa.

Recommendations

The revitalization of **traditional EWS** as envisioned in the project should be further followed up. For this purpose, the feasibility of traditional institutions and their indicator systems have to be re-checked and re-adjusted to current conditions. As for instance, mobile phones could also play now an important role even in traditional EWS.

Not in the hand of the project, but on the long run, the regional or federal government could enhance the enabling conditions for up-scaling the project by **improvement of the the communication infrastructure** in Afar, internet and mobile network, as well as the literacy and educational level, so that reporting becomes a skill available to the majority of people.

As also suggested in the Awra adaptation plan, EWS should include meteorological information. Collaboration with meteorological and climate related institutions, such as the local MetServices, ICPAC as a regional organization and ACMAD as a continental one, will support the incorporation of meteorological and climate information into EWS. The benefit is mutual: most meteorological and climatological institutions are not aware which users might need which information, therefore, if UNDP would indicate its needs, it would also help them to tailor their activities accordingly. For the political level, collaboration with the African Climate Policy Centre might also be beneficial to initiate this collaboration.

Adaptation plans suggest also the integration of early warning systems with holistic disaster risk reduction programmes and practical action to prevent disasters or reducing their impacts and reducing vulnerabilities, embarking on social and economic development to build local resilience to climate change. . *“A major strategic challenge and opportunity lies in building a bridge between current disaster risk management systems and strategies which promote climate change adaptation through the reduction of climate risks. There is an urgent need to move away from the current disaster-emergency relief driven syndrome towards a multi-hazard and cross sector consideration ».*

In this context, collaboration with UNISDR might be an option, which is establishing operational early warning systems for floods and droughts based on the **HFA framework** on regional (IGAD) level. UNDP could try to link up Afar region with this effort. Within the HFA, the **linkage between early warning and resilience towards disaster**, which has been demanded within the climate adaptation plans, is also a pillar, and could be addressed on all levels from Kebele to region also within frameworks for UNCCD implementation. .

The project/UNCCD/Ministry of Environment and Forestry could also link up with the **various panels on indicator development** of the UNCCD on early warning and land degradation and use these indicators for Afar and other regions in Ethiopia.

5.3. ENVIRONMENTAL SCHOOL CLUBS

School environmental clubs were equipped with hand tools to enable clubs to plant trees. The plans on average are to practice different environmental activities once a month on the school compounds, but due to water shortages, as was reported during the field consultations.

In Awra, five different clubs were equipped with tools, and they meet every month. In one school, there are planting activities. The other ones have not yet started due to water scarcity.

Relevance, Feasibility, Recommendations: The relevance of environmental school clubs is very high, both for educational as well as for practical purposes. If the habit of tree planting becomes already a routine in young age, it is also easy to be perpetuated as a habit in older age. The activity has also positive psychological impacts on children, and can raise awareness in the whole family. But most environmental school clubs visited during the field consultations were facing water scarcity, so that tree planting could not be conducted. This might lead to frustration or even a lack of credibility of the activity, if tree-planting is the only targeted activity in the environmental clubs at all. Therefore, for times of water scarcity, other activities should be conducted alternatively to ensure the continuity of activities in the school clubs. School environmental clubs could also conduct awareness raising, assessment of certain data like rangeland coverage, determining biodiversity etc. or could be occupied with technical issues, like establishing rain gauges and measuring precipitation, which would create synergies between project information needs and educational purposes.

5.4. KNOWLEDGE MANAGEMENT AND INVOLVEMENT OF SCIENCE

Knowledge management is a cross-cutting issue for TerrAfrica.

The UNCCD recommends to acknowledge both traditional and modern science with the same credit and to use scientific information regularly for project implementation. The project has taken that into account through collaboration with Mekele and particular Semera University, which is therefore very relevant for the implementation of the UNCCD.

The project has also conducted a High Level Policy Forum in Semera on March 6th and 7th, which was enriched by many scientific presentations, containing as some of the major topics irrigation and soil salinization, the impact of development on traditional institutions, the impact of climate change on pastoralism, invasive species etc..

The project has improved knowledge generation through the establishment of the two documentations and has conducted a lot of training and awareness raising activities.

Recommendation:

Still, there is little inter-linkage between knowledge generation and its dissemination. As for instance, while the documents on traditional resource use and the livestock document are not used to inspire interventions in these areas yet, but could be used as frameworks for coming project phases.

Within the framework of the project, the project has achieved what was possible in respect to the involvement of science. With regard to the large needs for data and scientific research to tackle the emerging social and environmental change, a separate knowledge management project could be established on NRM, water development and pastoral and agro-pastoral livelihoods in Afar. At UNDP level, this could be a CB-2 project supported by GEF. Otherwise, it would also be recommendable for UNDP to collaborate with research organizations such as ICRISAT, ICRAF, IWMI and Universities on the respective topic and support them in accessing research funds.

5.5. AWARENESS RAISING AND OUTREACH ACTIVITIES

The project has produced a lot of awareness raising and information materials. As for instance, according to its report, the project produced different print materials such as 14,000 brochures, 5000

posters, 2500 environmental club establishment guidelines, 200 hats and 200 T-Shirts which were distributed to the communities for awareness raising and dissemination of information.

Furthermore, the project has produced Radio and TV programs in Ahmaric and Afar language for awareness raising.

Main exhibition places were the Woreda Project Offices, but also the Cheka houses were used for display of the information materials.

Feasibility and Relevance: The activities are all very important and the materials developed are attractive and convey important messages. In particular using the Cheka houses in Woreda offices are appropriate locations to display the materials.

Recommendation: For sustainability, awareness raising should take regularly, preferably on certain occasions such as the Day for Combating Desertification on June 17th. etc.

Continuous involvement of communities into planning and management of Natural Resources raises more awareness than campaigns.

6. GENERAL PERFORMANCE OF THE PROJECT

6.1. COHERENCE

The project was developed with support by DDC to implement IDDP and TerrAfrica as part of the UNCCD agenda. On national level, it is part of the implementation of the Growth and Transformational Plan for Ethiopia and within this of the CRGE (Climate Resilient Green Economy) Strategy, whose agenda is mainly to design the implementation of the GTP in a carbon efficient way, which reaches carbon neutrality until 2025. The objective of the UNCCD is to support livelihoods in drylands, to combat desertification and land degradation, and to enable communities to adapt to or cope with droughts and address water scarcity. IDDP and TerrAfrica are supporting this framework, but IDDP with a higher focus on livelihoods in IDDP and TerrAfrica with more focus on climate change issues and modern technologies.

Climate adaptation is therefore a component of UNCCD, IDDP, and in particular of TerrAfrica. In this sense the project is in coherence with these institutions. However, climate change adaptation is rather an overarching issue to the more focused SLM objectives of the UNCCD. The genesis of the UNCCD shows a history of a severe neglect compared to its sister conventions CBD and UNFCCC, since its major focus, soils, land and dryland people, have not attracted the interest of donors from modern urban centres, whose livelihoods are not dependent on land. The UNCCD has therefore received later and lesser funds and political support than its sister conventions, the UNFCCC and the UNCBD. It is therefore debatable, if it makes sense to divert a project, which has originally been designed as an SLM project, into a broader climate adaptation project, which could have received funds from elsewhere more easily than SLM targets. However, since the decision to implement the climate adaptation plans was made on policy level, which also ensures the political and financial sustainability of the project (see section below), the direction the project has taken by merging political considerations with land issues appears to be very wise and finally was mainly successful in merging land issues with the climate adaptation plans.

Coherence of Climate Adaptation Plans with UNCCD/TerrAfrica/IDDP and Coherence of Project Activities with Climate Change Adaptation Plans

The Climate Adaptation Plans of Afar Region and the five target Woredas concretize different activities to be conducted for climate change adaptation. The suggested interventions areas by the project are in line with the Regional Adaptation Plan. The regional adaptation plan focus areas are:

- Catchment treatment through land management, moisture and soil conservation and flood control methods through community participations;
- Implement soil and water conservation programs and projects that promote local community participation;
- Focus on rehabilitation and reclamation of degraded rangelands, reforestation, conservation, management and protection of rangeland resources;
- Rehabilitate and manage dry season grazing lands;
- Balancing the livestock numbers with the available feed resources and diversifying the herd species according to the available vegetation type by incorporating the indigenous knowledge;
- Further understanding of the traditional knowledge on rangeland rehabilitation and utilization and starting an action from the indigenous knowledge;
- Discourage unsustainable utilization and mismanagement of rangeland resources;
- Paying particular attention to regeneration of degraded rangelands and related mitigation actions like area enclosure, identifying of dry and wet season grazing lands;
- Implement measures to control aggressive weeds and other invasive plants such as *Prosopis juliflora*, *Parthenium*, *Tribulis* and *Acacia nubica*;
- Implementation of planting multi-purpose trees at house hold level in areas where water is available from irrigation structures by community participation;
- Promoting and enhancing of community consultation, assessment and design in developmental activities;
- Assure participation of the pastoralists in development initiatives including managing of the natural resources, their environment and its impacts to a level which enable them to influence policy and implementation at the national level;
- Advocate for proper land use policy and resettlement options which is friendly applicable with their environment especially the natural resources;
- Revitalize traditional shifting grazing to give chance for rehabilitating and recovering degraded rangelands, useful trees management;
- Support the decentralization process, including the devolution of responsibility for management and decision-making to local authorities and the active participation of traditional institutions;
- Enhance the active participation of local communities, including women
- Establish Kebele, wereda and regional level cooperatives which will enhance, strengthening and link the traditional natural resource management system with the modern systems and technologies.

All these recommendations have indeed been reflected in the interventions of the project and are in coherence with the objectives of the UNCCD and the CRGE. They are also coherent with the UNDAF goals.

6.2. GENERAL FEASIBILITY OF PROJECT ACTIVITIES AND APPROACH

The project has a clear strength in introducing new and – in line with TERRAfrica and NEPAD – modern technologies. Its backbone is the implementation of “best practices”, which are scaleable and can easily be replicated to other Kebeles and Woredas.

6.2.1. IMPLEMENTATION APPROACH

Bottom-up Approach

The implementation strategies applies a genuine bottom-up approach for climate change adaptation in two phases, starting with community meetings to discuss the major threats from climate change, which was the basis to suggest practices and technologies to adapt to the expected climate impacts in the best way for various sectors. This activity had been conducted by a Spanish NGO in a partner project of EPA Ethiopia. Based on the priority activities identified in the climate change adaptation plans AIDLMP organized further community consultations in another step to select those practices, which communities considered as most appropriate for integrated dryland management. This activity replaced the drafting of EMPs and LEAPs which were envisaged in the original logframe.

Observations:

The implementation approach addresses genuinely all community members on Kebele level. The use of the climate adaptation plans for the AIDLMP enhances also the efficiency of stakeholder involvement and was successful in ensuring the necessary political support. While this was feasible for the current phase, it should not be replicated, and future phases on UNCCD implementation should instead narrow down and diversify activities mentioned in the climate adaptation plans as well as mainstreaming them into narrower policy frameworks, preferably within the agricultural and forestry sector, since the climate adaptation plans are the coarser and overarching frameworks, to which other activities should be fine-tuned.

Resilience approach

Improving resilience to climate change is one of the sub-goals of the changed logframe, and implies the capacities of communities to absorb shocks and deal with stressors. To analyse the feasibility of the resilience approach, the four pillars for implementation of resilience approaches defined by IUCN are used here, which are diversification of incomes and ecosystems, sustainable technologies, adaptive learning and self-regulation. The project has contributed to all these pillars:

Income and ecosystem diversification is improved through the introduction of irrigation agriculture and livelihood interventions, *sustainable technologies and innovations* have been introduced through the establishment of solar panels, soil and water conservation, and irrigation structures, which enhance the physical and natural capital of communities. *Self-regulation* is ensured by the bottom-up approach of the project, which ensures regular decision making of communities. It is also an element of saving rings and cooperatives and in the coalition building targeted in the new logframe. While by-laws have been drafted in all communities, these could still be put more into focus in project management by adapting them to the new conditions and interventions, since by-laws play a critical role in self-regulation. Since training is preceding all interventions of the project, *adaptive learning* is also ensured by the project management.

Connectivity issues should also be better taken account into NRM through rehabilitation or conservation of lateral flow between and among patches of vegetation.

Integrated Nature of Interventions

The project has created strong synergies within its various interventions through providing trainings before the implementation of almost every intervention.

The project has in particular created synergies through the **integrated nature** of its approach by combining interventions to address the various issues as listed below in Table 3:

Table 3: Combination of interventions which enhanced the integrated nature of interventions

<i>Issue</i>	<i>Combination of Interventions</i>
<i>Livestock fattening</i>	Fodder banks, backyard forage, veterinary kit
<i>Livestock marketing</i>	Establishment of marketing centre, livestock fattening
<i>Livestock productivity and grazing land management</i>	Enclosures, shifting grazing, control of invasives

<i>Synergies through irrigation between crop and livestock productivity</i>	Irrigation for agriculture, irrigation for fodder banks
<i>Synergies between livelihoods and irrigation</i>	Alternative construction, professional trainings to be used for new housing sites at irrigation fields
<i>Environmental friendly energy, health and education</i>	Solar panels for cold chain and schools

6.2.2. FEASIBILITY OF SINGLE INTERVENTIONS

The project is considered as very important, however, its coverage is considered as much too small. The problems the project is tackling are therefore not yet solved, not even where the project is working, and therefore the demand for up-scaling is high. Not all activities can be up-scaled equally in pastoral and agro-pastoral areas, therefore, Table 4 shows in the following, which activities are recommended to up-scaling under which land use systems.

Table 4: Recommendations for Up-scaling

xx = Highly recommendable

x = recommendable

Intervention	Up-scaling in Agro-pastoral areas	Up-scaling in Pastoral areas	Remark
Document.			Dissemination and use instead of up-scaling
SWC	Xx	xx	Labor and material might be limiting factors
Invasives	Xx	x	Labor capacity might be limiting factors and type of labor input might cause trade-offs for mobile pastoralism. Looking for innovative labor-efficient technologies is an important option.
Enclosures	Xx		Rangeland availability might be limiting factor. Might cause trade-offs with mobile pastoralism. Improving rangeland – water balance and livestock mobility in pastoral areas instead
Fodder banks	Xx	X	Water and land might be limiting factors. Might cause trade-offs with mobile pastoralism
Shifting Grazing	Xx	xx	Shifting grazing might need to cover larger distances in pastoral than in agro-pastoral areas and require water development on grazing routes
Destocking	X		
Irrigation	Xx	X	Water and land limitations, might cause trade-offs with mobile pastoralism, should be based on solid land-use planning and hydrological data base
Handpumps, shallow wells	Xx	X	In pastoral land balancing of land and water resources is important to avoid overuse of land and land degradation. Collaboration with pastoralists on water development in grazing routes
Roof Water Harvesting	Xx	xx	Possible limitations by cost factors
Solar Panels	Xx	xx	Possible limitations by cost factors
Livestock Marketing Centre	X	x	The project targeted an additional market centre, which might satisfy the needs
Alternative Construction	xx	x	Pastoralists might prefer mobile houses

Saving Rings	X	x	Could be supplemented by revolving community fund
Cooperatives	X	x	Intervention useful, but there are sustainability threats
Professional Trainings	X	X	Focus should be on drop-outs from pastoralism and continued for youth and women, has to be linked to labor market
School Clubs	Xx	xx	Should go beyond simple planting activities towards more diversified ones
EWS	X	x	Rather revitalization of traditional EWS as originally envisaged
Awareness Raising	X	x	Better would be continuous involvement of communities

For some of the activities, trade-offs would occur, if implemented in pastoral areas, and some interventions create directly trade-offs with mobile livestock management in rangelands. As for instance, villagization and enhancing cropland areas can reduce pastoral reserves. Destocking might inhibit pastoral mobility. The question, if pastoralists can easily be converted into irrigation farmers, is also open. To circumvent this problem, it is for the future recommended to implement project features directed to land management a project with a focus solely on rangeland management through livestock mobility, which is the most feasible form of land management under the erratic environmental conditions of Afar which is currently known.

6.3. SUSTAINABILITY

In general, sustainability is related to risks and assumptions made during the design of the project. The project document has addressed three major challenges: communication, hot temperatures and conflicts, where communication and conflicts mainly relate to institutional sustainability, and hot temperatures affect almost all area of sustainability. Besides this, during the evaluation other sustainability risks could be identified, which are described in detail in the following.

6.3.1. INSTITUTIONAL SUSTAINABILITY

The project has laid the most important cornerstones to achieve institutional sustainability by giving continuous trainings on installation and maintenance for all interventions it provides. Communication problems, in particular weakness of internet and mobile communication network, still affect institutions, and in the current project particularly the sustainability of EWS. The project has contributed substantially to the improvement of institutional sustainability by providing internet access etc.. Furthermore, high social competence and communication skills of the project partners are partly offsetting the weak technical structure of communication. Otherwise, the overall communication structures needs to be addressed on governmental level.

6.3.2. ENVIRONMENTAL SUSTAINABILITY

The Afar environment belongs probably to one of the world's most difficult landscapes to manage, and the fact that it could support livelihoods at all, is owed to the very austere lifestyles of Afar people, which can easily get out of balance, if small changes happen. The vulnerability of the environment-livelihood balance is therefore significant and sustainability threats, which the project aims to respond to. The problem is, that there is worldwide little experience in responding appropriately to these changes, therefore, there is also little experience in achieving sustainability. As for instance, enclosures, fodder banks are threatened by livestock, droughts and encroachment. While invasive species have been successfully removed, there is hardly any guarantee that they might not return. Irrigation schemes have failed before, if they are not continuously maintained and managed properly, also their sustainability might be threatened.

The most sustainable intervention seem to be solar panels, because they are quite resilient, and also soil and water conservation structures, because they themselves enhance sustainability through their existence.

6.3.3. INSTITUTIONAL SUSTAINABILITY

Though the project has tried to cater for institutional sustainability, as for instance through the establishment of committees and cooperatives, even the Awra adaptation as well as the Bureau of Cooperatives have emphasized their vulnerability due to high mobility of stakeholders, general poverty and skill gaps.

By-laws are an important instrument to ensure institutional sustainability, which can further used to ensure environmental and political sustainability, but not much is reported about by-laws in the project. By-laws can be customary laws and modern regulations, and it is recommended to merge both forms to adapt to the new environmental and social challenges.

6.3.4. POLITICAL AND FINANCIAL SUSTAINABILITY

Financial sustainability is partly linked to political sustainability, because future financing requires continuous support. Discussions with MoEF, formerly EPA, could confirm that the project fully enjoys the support of the Ministry. The Ministry also confirmed its commitment for future funding, even if no external funds could be ensured, own funds would be leveraged to finance the continuity and up-scaling of the intervention. The same was confirmed by line bureaus in Afar.

6.4. EFFECTIVENESS

The project has successfully finalized all activities according to its targets, except the livestock market centre and the irrigation scheme. More details about this have been highlighted in the details sections on these interventions above.

Most other interventions have been successfully completed, however, some short-comings could be identified for some of them, such as interruptions of services of solar panels or shallow wells. Also, some soil and water structures needed maintenance. The percentages of these interruptions were around 10%, therefore within a fully acceptable range.

6.4.1. DIRECT AND INDIRECT BENEFICIARIES

Direct Beneficiaries

Communities of 15 project Kebeles of the project weredas, with around 6000 inhabitants per Kebele, which amounts in total 90 000 people, can benefit from those project interventions which serve all community members in the same way, as for instance from solar panels for schools and health centres, depending on their access opportunities. 90% of these beneficiaries are pastoralists, 10% agro-pastoralists.

Smaller interventions, like fodder banks, enclosures, irrigation schemes, benefit also smaller numbers of people, as indicated in the description of the single interventions above, as far as numbers were known.

Indirect beneficiaries

Communities of 30 neighbouring Kebeles of the project weredas are benefiting from the same interventions, which are $6000 \times 30 = 180,000$ people. Also institutions belong to the beneficiaries

Directly Benefitting Institutions

- Environment protection land use and administration agency



- Pastoral Agriculture development bureau
- Health bureau
- Education bureau
- Water resource development Bureau
- Cooperative promotion office at regional level and their respective offices at wereda level

Indirectly benefitting Institutions

- Micro enterprise promotion and development office
- Disaster reduction and food security programs coordination office
- Electric power authority
- Rural Road construction authority at regional level and their respective offices at wereda level.

Beneficiary from Ewa Irrigation Scheme. Photo: Ingrid

6.4.2. RANKING OF ACTIVITIES ACCORDING TO USER SATISFACTION

According to the reports by the Technical Committees, who had assessed the overall satisfaction of beneficiaries in their Woreda, soil and water conservation were appreciated mostly by the Kebeles, which are most drought affected. In these Kebeles, the water component of the project is considered as its major merit, as one community member said: *“This is the project of our life. Water is life. The project has given us water. So the project has given us life.”*

Others considered livelihood services as more important, in particular the activities of cooperatives and support to unemployed youth, who were enabled now to do their own business. Beneficiaries were convinced that their livelihoods had been substantially increased through the project interventions.

Other community members ranked the contribution of solar panels to health centres highest in particular for women, since women were no more forced to travel long distances for delivery.

User satisfaction is only a weak tool to assess the effectiveness of a project. The short-coming is, that the satisfaction of users is frequently based on the satisfaction with immediate benefits, while satisfaction with benefits to be expected on the long run is usually not expressed by users. Users have also not the option to compare different alternatives, which to implement would have been possible. Furthermore, also different preferences of different stakeholders can be attributed to their different living conditions: water and pasture development are usually top priorities for pastoralists, while it is for agro-pastoralists (who more often have secure access to water) rather health posts and schools, which also has been the case here.

6.4.3. ENHANCING CAPABILITIES OF COMMUNITIES AND OTHER POSITIVE PROJECT IMPACTS

The project has substantially enhanced the capabilities of communities to manage their environment sustainably and to satisfy their basic needs in different sectors:

Energy: The project paved the way towards the envisioned carbon neutrality and promoted independence from fossil fuel through the introduction of solar panels.

Health Sector: Capabilities of health institutions were improved to supply vaccination and medicines to communities **and** protect them against deterioration.

Food and water: Capabilities of communities to provide themselves with a higher diversity of food through the irrigation agriculture interventions, with more milk and meat through fodder banks and enclosures, and with safe water through hand pumps and shallow wells.

Environmental Management: Capabilities of communities through improved management of rangeland through the establishment of enclosures, fodder banks, hay production, dealing with invasive species, ensuring soil and water conservation and irrigation etc..

Gender: Gender is mainly conceptualized through the involvement of women, which is actually high. Beneficial impacts on women have also been identified through improved health through safe water and the cold chain in health sectors. The conceptualization of gender could be expanded and include equal rights, access and incomes of women and reduced labor as project targets.

6.5. EFFICIENCY

6.5.1. TIME EFFICIENCY

Time efficiency measures the ratio between time requirements and outputs. Time efficiency is therefore also closely linked to effectiveness.

The project has worked very efficiently by conducting many interventions in a relatively very short time. For many interventions, this was accompanied also by high effectiveness. This applies for all activities which could be multiplied by communities. Also for the activities, where innovative sustainable technologies were introduced, such as for solar panels.

For some interventions, it would rather be necessary, to address underlying problems first, such as the communication problems within the internet and mobile network, as would be necessary for the further development of communication for Early warning systems.

For Early Warning Systems and some other activities, one would have wished, the project would have allocated more time or had abandoned the activity, since within the available time frame the problem could not be fully addressed.

6.5.2. COST EFFICIENCY

The total budget allocated to the project is almost 1.6 Mio. USD. The amount of activities conducted with this budget is enormous, compared to similar projects.

To assess the cost efficiency for single interventions, standard data are used as a proxy, which are taken from the TerrAfrica Document on Best Practices for similar activities. Comparison is therefore only given for the activities, where costs per ha could be compared

The document distinguishes the following:

- Low-cost activities: 0 – 1200 ETB/ha
- Medium cost activities: 200 – 3000 ETB/ha,
- High cost activities: 3000 to 24 000 ETB/ha.

This compares to the costs of the following interventions in the Project listed in Table 5:

Table 5: Interventions and Costs per Unit:

<i>Intervention</i>	<i>Costs per Unit (ETB)</i>
<i>Soil and Water Conservation</i>	101 440 / Woreda
<i>Nursery Site</i>	67300 / Woreda
<i>Cheka House</i>	17000 / house
<i>Riverbank stabilization</i>	3392 / km
<i>Livestock Watering Points</i>	61.328/ water point

<i>Invasive Species Management</i>	5088 / ha
<i>Area Enclosure</i>	660 / ha
<i>Fodder bank</i>	2200 / ha
<i>Backyard forage development</i>	452 / household
<i>Vet Service for Livestock fattening</i>	678 / household

The most labor intensive activity is undoubtedly invasive species management, therefore, being in the lower range of high-cost activities is appropriate for this very difficult activity. The lowest cost activity is Area Enclosure, and its cost also fall in the standard range for low-cost activities. Fodder bank as a more intensified intervention is budgeted within the medium range. Therefore, cost efficiency seems to comply with the standards.

To assess the cost efficiency of livestock fattening is not possible, because also the costs for supplementary feed has to be factored in, but with a ratio of 1.6: 1 for returns from fattened livestock, this seems to be easily justified.

Cost efficiency for solar panels is related to market prices, and the Ethiopian government has enhanced the cost efficiency by reducing the import taxes.

No assessments can be made for other activities, which, however, seem to create even lower comparable costs.

6.5.3. LABOR EFFICIENCY

Labor efficiency for the removal of invasive species is low, due to the nature of invasive species themselves. It is therefore recommendable, to look for innovations and technologies, which facilitate the management of invasives to reduce the burden put on communities.

Secondly, labor efficiency in rangeland management through shifting grazing can be high, since it covers large areas, and should be further promoted.

6.5.4. CARBON EFFICIENCY

All project interventions are very carbon efficient and contribute to the goal of achieving carbon neutrality until 2025 under the CRGE. Interventions such as fodder banks, enclosures, irrigation agriculture and SWC are all interventions which sequester carbon to at least the double amount of the original land cover, creating synergies also with water management through enhancing water capacities of soils. Solar panels reduce the emissions of kerosene. Therefore, carbon efficiency of the project is very high.

7. THE WAY FORWARD

For the future, activities should both focus on up-scaling and upgrading project activities, furthermore on the improvement of enabling conditions for integrated dryland management through capacity building, and finally mainstream the best practices identified by the project into further policies and targets, which merge UNCCD goals with national goals and tapping other sources of funding..

7.1. UP-SCALING, UPGRADING, FUNDING AND MAINSTREAMING

Many of the project activities should be up-scaled, but there are certain limitations for up-scaling, which are mainly related to pastoralist areas and need therefore be adjusted in these areas. Upgrading should be done for fodder-banks, to which seeds and seedlings should be provided. Otherwise, up-scaling should proceed according to the table listed in Table 4. It is highly recommended to the Government of Norway, to continue future phases of the project.

Up-scaling of technologies in future phases should be mainstreamed into defined policies and management plans, which acknowledged trade-offs between various users, land, water and mobility and should not be seen in isolation. Ecological connectivity – the lateral flows between vegetation patches, and social connectivity – community planning, mapping and the drafting of by-laws, should also in future receive high consideration.

Wherever possible, climate adaptation funds should be tapped and public private partnerships should be established.

7.2. KNOWLEDGE MANAGEMENT AND CAPACITY BUILDING

7.2.1. ESTABLISHING A SCIENCE AND KNOWLEDGE MANAGEMENT PROJECT

To fill existing data and research gaps on water resources and their development as well as on carrying capacities of rangeland for humans and livestock to facilitate NRM, an own knowledge management could be conducted, such as a CB-2 project funded by GEF, as has already been recommended in the specific section above.. While the project has already involved Universities in many of its interventions, these efforts could also be strengthened, and any kind of national and international research on water development, biodiversity of rangeland, livestock nutrition, linkages between natural resources and livelihoods, economic valuation of pastures and pastoralism, should strongly be encouraged and linked up with. To support governmental policies in Afar Region, in particular the establishment of land use and land-suitability maps would be beneficial, which would allow also the zonation in suitable areas for pastoralism and for irrigation agriculture. This might be facilitated by FAO.

7.2.2. CAPACITY BUILDING

Skill gaps in reporting on Kebele level were both addressed in the various climate change adaptation plans as well as by the different Line Bureaus during the field consultation.

- **Mapping:** Line Bureaus themselves expressed their particular interest into improving their own mapping skills, and since indeed mapping skills can significantly enhance the effectiveness of natural resource management, skills in the use of GPS, GIS, or the no-cost QGIS on higher level, and basic skills of participatory mapping could be essential to support NRM in the region.
- **Zoning:** For mapping land areas suitable for irrigation versus pastoralism, a **visiting tour to FAOSWALIM office in Nairobi** can be recommended.
- **Reporting:** In other UNDP country offices the suggestions were made to train all newly employed UNDP local project staff in RBM and financial reporting directly after recruitment. This is also recommended here, as mentioned in one of the initial chapters.

7.2.3. VISION MAPS AND SUBCATCHMENT MANAGEMENT PLANS FOR NRM

Rangeland and water management should be implemented on a catchment or sub-catchment level, respectively, which would allow improved balancing of rangeland with water resources, as an imbalance will either lead to overuse or to sub-optimal utilization of either pasture or water. Planning should therefore preferably be conducted in a way that optimizes the use of rangeland resources.

Instead of LEAPs and EMPs, which have been abandoned in the current project, community vision maps and subcatchment plans for harmonizing rangeland and water management could be established to support land and water management.

Traditionally, pastoralists themselves play an important role play in the water development process, as they are the ones with most detailed knowledge of rangelands and the water resources there and they should be fully involved in these activities throughout the planning, construction and management of water points. This would also take into account the recommendation in the Afar Regional adaptation plan to optimize water points on grazing routes.

To enhance institutional sustainability for land and water management, a collaboration with water user associations and pastoral associations is recommendable.

The establishment of sub-catchment plans and balancing of water and rangeland management on community level could be studied in the BDR project by IUCN, implemented in Uganda and the ASALs

of Kenya, the latter one endowed with similar environmental conditions as Afar. The BDR project has similar goals as the AIDLMP in respect to Natural resource governance and the merging of traditional with formal laws. It is recommended, to **target the BDR project part in Kenya during the next exchange visit tour**. On the other hand, AIDLMP could share its success stories on soil and water conservation, fodder banks, irrigation agriculture etc..

7.3. MARRYING TARGETS OF LAND DEGRADATION NEUTRALITY WITH CARBON NEUTRALITY

While it is the target of the CRGE strategy of the GoE to achieve carbon neutrality until 2025, it is the new target of the UNCCD to achieve land degradation neutrality. Land degradation neutrality aims to achieve a condition, where land degradation activities are offset by land rehabilitation activities. Since most of carbon emissions in drylands originate from land degradation, addressing land degradation is most effective in addressing carbon emissions. Land Degradation Neutrality can therefore be considered as the translation of carbon neutrality to the ground. The advantage of addressing land degradation neutrality is, that clear targets and indicators of the UNCCD can be used. .

- **CRGE recommended activities in the agricultural and forestry sector:** Activities for land rehabilitation could also be the ones defined in the CRGE for the agricultural and forestry sector and prioritized in the same way by communities as it has been done for the climate adaptation plans.
- **Supporting Livestockstock mobility:** Obviously, to rehabilitate and manage the rangeland of Afar under the more and more erratic climate regime, livestock mobility is one of the primary requirements, which should be put into focus in future project phases. The revitalization of traditional practices, as described in the documentation on traditional governance and the documentation on livestock management which have been established in the current project phase could be used as guidelines.

7.4. PUBLIC PRIVATE PARTNERSHIPS AND CLIMATE FUNDS

Many of the interventions implemented, would also qualify for public private partnerships or to be supported by climate funds. In particular the more expensive investments for solar panels could be funded through PPPs. Irrigation, solar energy, sustainable rangeland management, dryland agriculture, also can be funded by a wide range of climate funds for adaptation, but even for mitigation, and should be tapped in future.

7.5. GENERAL RECOMMENDATIONS

Finally, a list of issues identified in the project and recommendations are attached in the following table:

Table 6: List of Observed Issues and Recommendations

Issue	Observation	Recommendation
General	Project tested and demonstrated many different activities for climate change adaptation and SLM, proving them to be feasible and effective	Up-Scaling and Up-grading Funding of future phases, in particular for land degradation neutrality and SLM Embedding best practices into appropriate agricultural, pastoral, forestry and other NRM policies
	Impacts of projects are very positive, but different to different stakeholders	Project could better monitor impacts by using impact indicators and assessing trade-offs of project impacts on land, water, mobility for different land users
	Land and water issues could be integrated	Establishment sub-catchment and catchment plans which integrate water and land issues. Implementation of water development along grazing routes as identified in Afar regional Climate Adaptation Plan

		Supporting land suitability mapping for the region
	Project could benefit from better data bases and scientific research	UNDP could try to implement a CB-2 (knowledge management) project funded by GEF, if possible, furthermore encourage Semera University to send their students for internships and research programmes for simple data collection and mapping activities, furthermore should encourage collaboration with FAO on establishment of vegetation, land cover, land use suitability maps etc. and encourage and involve into international research
	Internationally, strategies to deal with invasives are fragmented, inconsistent, under-funded and under-researched, nationally it is hard manual work	UNDP could establish task force to handle the issue in collaboration with RBIPMA project of UNEP
	Project focusses on implementation of best practices	Best practices could also include software related activities, such as policy focus, stakeholder involvement etc..
	Environmental sustainability risks for irrigation and enclosures, financial for solar panels	Drafting bylaws, tapping climate funds and PPPs, ensuring lateral flows between vegetation patches during NRM
	Project could benefit from clear targets on land coverage	Implementing Land Degradation Neutrality
Gender	Addressed through health issues and involvement in activities	Could be expanded by making equitable labor distribution, incomes, access and rights project targets
Reporting	New logframe partly fragmentary	Newly recruited local UNDP project staff could receive training in RBM directly after recruitment as a standard service ProDoc adjustment to changes which were decided upon
	Inadequate financial reporting	Giving training to staff responsible for financial reporting on all levels
Documen- tations	High added value of documentation on traditional NRM governance and Livestock	If considered feasible, editing and publishing of second part of traditional documentation Using the documents for implementation of coming project phases
	Interest into capacity building on mapping skills by line bureaus, project staff and others	Training on participatory mapping techniques for basic level, training in GPS, QGIS or GIS for more advanced level of staff responsible for NRM and planning
Soil and Water Conservation	Highly feasible and relevant	Should be further up-scaled. For up-scaling in other areas communities might need initial incentives, trainings or support of materials, and should integrate their roles and duties in SWC in by-laws.
Control of Invasives	Regional problem of all rangelands in HoA, but under-researched and underfunded and no common strategy developed.	UNDP should create a task force on dealing with invasives in rangeland on IGAD level and should support and encourage research and innovation Rapid Response Mechanisms for the Early Detection of and Rapid Response to new infestations of invasive alien plant species should be established from federal to Kebele levels.

Enclosures and rotational grazing	Not clear, if local management ensures maximum productivity	By-laws and local management plans should be re-checked, if productivity concerns are adequately addressed, and if not, management options for maximizing productivity introduced
Fodder banks and hay production	Creates trade-offs on water and land Seed scarcity Higher requirement to soil quality	Up-scaling only possible in agro-pastoral land, where land and water resources are sufficient Plants selected should have high biomass productivity Upgrading by project-owned seed production Considering night-corralling as option for improving soil nutrients and soil organic matter Additional introduction of cut-and-carry systems Comparing cost-and benefits of hay production with other options of supplementary feeding
Shifting Grazing and Destocking	Shifting grazing exists anyway and visibility of encouragement through project activities needs further strengthening	Moving towards a modern system of livestock mobility which integrates conservation issues Solving the question of opportunistic versus controlled grazing under consideration of optimized pastoral productivity, valuation of pastoralism versus other land uses, taking fully into account all ecosystem services. Assessing the option of livestock trucking to ensure livestock mobility in a modern way Supporting livestock mobility for rangeland management, wherever considered feasible
Irrigation	Kebeles with access to irrigation request up-scaling. No data available. Huge structure very vulnerable in summer. Trade-offs with pastoralism	Feasibility should be re-assessed by an irrigation expert to whom available data should be provided. Updating hydrological data and information and making them available to all staff occupied with irrigation Establishing integrated water management and land use plans to avoid trade-offs Considering multiple water uses and assessing alternative irrigation methods for improving water use efficiency and productivity under consideration of cost-benefits of all ecosystem services affected
Handpumps, shallow wells and Animal Troughs	Shallow wells fall sometimes dry	Considering deep wells as alternative. Otherwise up-scaling within Kebele and outside. Developing water points in rangeland, where water is constraining grazing. Removing redundant ones.
Roof Water Harvesting	Technically feasible	Cost-benefit analysis to compare with other water harvesting technologies, extending technology to both sides of the roof, up-scaling to other Kebeles
Solar Panels	Technically feasible, expensive	Up-scaling to other Kebeles and Woredas, looking for alternative batteries, such as ice bank batteries, identifying alternative funding options through PPP or from climate funds
Alternative Construction	Technically feasible, needs encouragement for replication	SWOT analysis before large scale replication in villagization programmes, improving size, design and amenity values
Saving Rings	Membership fee entry barrier to poor people, who furthermore do not have much to save	Establishing community fund and ensuring repayment by linking it to by-laws and certain incentives
Cooperatives	Unstable membership	Relating membership to by-laws and providing support system for potential drop-outs
Trainings		Ensuring sufficient professionalism of trainers and sufficient duration of trainings
Environmental School Clubs	Frequently targeted activities inhibited due to water scarcity	Diversification of activities towards creation of synergies with education and fulfilling data and information needs of project

Early Warning systems	Poor Communication, Narrow Approach, Traditional Early Warning systems not effectively revitalized	Addressing underlying communication problems on governmental level, linking up with UNISDR for HFA implementation, including disaster management and resilience approach into EWS, budgeting more time, or small grant project, for revitalization of traditional EWS. Collaborating with meteorological and climate organizations like MetServices, ICPAC, ACMAD and African Policy Centre.
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Annex

A: Literature Reviewed for Evaluation

Project Reports (chronological order):

DDC: Report submitted to the Government of Norway on Support for the Implementation of the UNCCD in the context of TerrAfrica Initiative under the umbrella of the Integrated Drylands Development Programme (IDDP), 2011

UNDP Ethiopia: Project Document 2011

EPLUA / AIDLMP: Annual Report 2011

EPLUA / AIDLMP: Annual Report 2012

EPLUA / AIDLMP: Annual Report 2013

EPLUA / AIDLMP: Quarterly Report January to March 2011

EPLUA / AIDLMP: Quarterly Report July to September 2011

EPLUA / AIDLMP: Quarterly Report April to June 2012

EPLUA / AIDLMP: Quarterly Report October to December 2012

EPLUA / AIDLMP: Financial Report January 5th, 2012

EPLUA / AIDLMP: Project Midterm Review 2013. Author: Gosho

Training Materials:

How land degradation is becoming serious in grazing areas. Power Point Presentation and others

Documentaries produced by the project:

EPLUA / AIDLMP: Traditional Natural Resource Conservation Practices of Afar Community. Authors: Assefa Biru, Kebenu Feysy, Abdurahman Mohammed, Mohammed Nuru Kemal

EPLUA / AIDLMP: Sustainable Livestock Production Guideline

Reports produced in MDG sister project:

Regional Climate Change Adaptation Plan Afar

Awra Woreda Climate Change Adaptation Plan

Chifra Climate Change Adaptation Plan

Ewa Woreda Climate Change Adaptation Plan

Mile Woreda Climate Change Adaptation Plan

Received, but not reviewed: Dewe Woreda Climate Change Adaptation Plan

Documents produced by the GoE

Federal Democratic Republic of Ethiopia (2011): Ethiopia's Green Economy Strategy

Federal Democratic Republic of Ethiopia (2010):: Growth and Transformation Plan 2010/11- 2014/15, Vol. 1

Scientific Articles Submitted to the High Policy Forum on the Future of Pastoralism in Semera:

Amanuel Mekonnen, Desale Kindane and Demel Teketay (2014): Analysis of Pastoralist's Adaptation to Climate Change and Variability in the Dry land areas of Ethiopia Afar National Regional State Lower Awash Basin

Desale Kidane, Amanuel Mekonnen and Demel Teketay (2014): An assessment of Land Tenure System and Conflict Resolution. Tendaho Irrigation Project Case study, lower Awash basin, Ethiopia.

Halake Dida Gobessa and Tadesse Woldemariam Gole (2014): The Impacts of Development Interventions on the Customary Institutions of Forest Resource Management: Among the Borana Oromo of Southern Ethiopia

Kebeu Feyisa Gonfa (2014): Characterization of irrigated soils and irrigation water in relation to salinity and sodicity: Implication for Management of Dryland Degradation. The Case of Fantale Irrigation Site in the Middle Awash Valley, Ethiopia.

Natnael Demelash, Lisanework Nigatu and J.J. Sharma (2014): Composition and diversity of invasive plant species and their socioeconomic impacts on livelihoods of pastoralists in the rangelands of Telalak District, Afar Regional State, Ethiopia.

Others:

Awulachew, S. B.; Yilma, A. D.; Loulseged, M.; Loiskandl, W., Ayana, M.; Alamirew, T. 2007.

Water Resources and Irrigation Development in Ethiopia. Colombo, Sri Lanka: International Water Management Institute. 78p. (Working Paper 123)

Boy, G. and A. Witt (2013): Invasive Alien Plants in Africa and Their Management. UNEP/GEF Removing Barriers to Invasive Plant Management Project. International Coordination Unit CABI Africa, 2013

Little, P.D., Behnke, R., McPeak, J, Getachew G.: Future Scenarios for Pastoral Development. in Ethiopia, 2010-2025. Report Number 2. Pastoral Economic Growth and Development Policy Assessment, Ethiopia

Mueller, E.N., J. Wainwright, A.J. Parsons, L. Turnbull, ed. (2014): Patterns of Land Degradation in Drylands

Nassef, M and Mulugeta B. (2011) Water Development in Ethiopia's pastoral areas. A synthesis of existing knowledge and Experience. USAID, Save the Children and ODI 2011

Seleshi Bekele Awulachew (2010): Irrigation potential in Ethiopia. Constraints and opportunities for enhancing the system. IWMI 2010

TerrAfrica 2011: Sustainable Land Management in Practice. Guidelines and Best Practices for Sub-Saharan Africa.

B: Approach and Methodology

The ToR suggest two phases of the evaluation, a field visit of 10 days, including an initial phase of receiving information from EPLUA, UNDP CO and DDC Pretoria, and a phase of 15 days report writing. While this division seems to be feasible, it is, however, suggested, to start with an initial phase of document review before the field visit, and deduct these days from the final report writing, so that the phases of the evaluation would be composed of

- a. A review of relevant documents
- b. Evaluation of project management structure, comparing project management achievements with objectives in regard to implementation, monitoring, reporting, established partnerships within Mille.
- c. According to the TOR, the consultant has to conduct the evaluation according to the UNDP guidelines, with a major focus on the performance criteria defined there. Therefore, an evaluation of the effectiveness of the project including design, relevance, effectiveness, efficiency, impact, sustainability, identifying challenges, constraints and success factors and providing conclusions and lessons learnt within the communities
- d. A final phase, where the findings are compiled in the final report. .

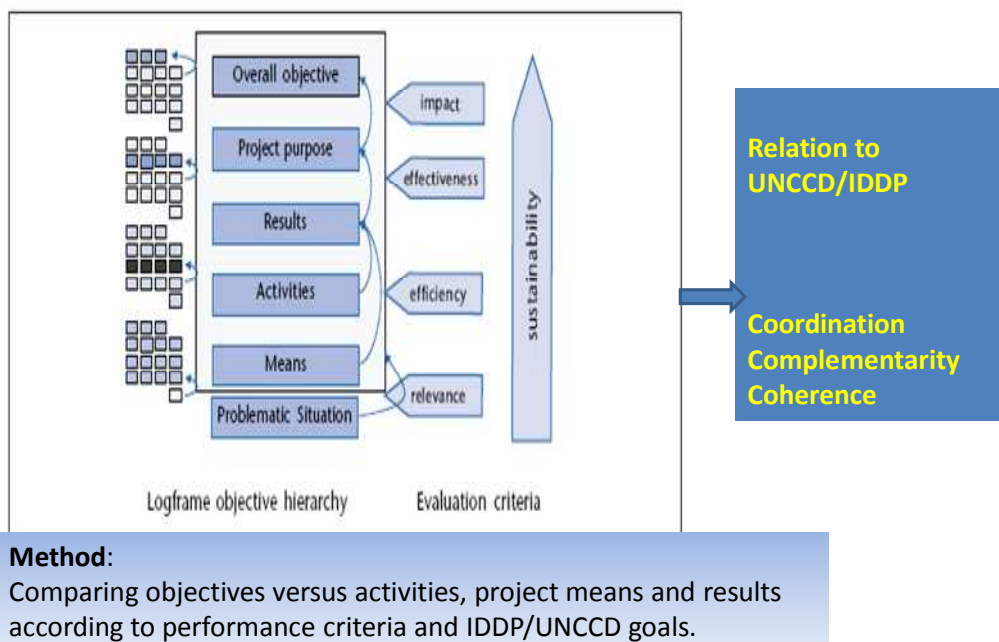
It is suggested to address the first three points through one approach according to UNDP guidelines which is highlighted in the following framework (Fig. 1) and by integrating it into the Output Matrix provided through the TOR as illustrated in Table 1 further below.

1. Framework for Evaluation and Evaluation Matrix

The project will use the framework for evaluation and evaluation matrix as described below.

Fig. 1: Framework for Evaluation

Methodology of Midterm Review



The particular significance of the single components within this framework is described in the following:

1. **Relevance** concerns whether the results, purpose and overall objectives of the intervention are in line with the needs and aspirations of the beneficiaries, and with the policy environment of the intervention, within the context of this project, mainly how project implementation is related to local needs and IDDP/UNCCD priorities. .
2. **Feasibility:** Strengths, Weaknesses, Risks and Opportunities of Programme Features, in particular in regard to ecological, economic and social interventions and their sustainability
3. **Impact** is the effect of the project on its wider environment, and its contribution to the wider sector objectives summarized in the project's Overall Objective, and on the achievement of the overarching policy objectives of the national institutions, UNCCD and IDDP and the various partners involved. Impact includes positive and negative, primary and secondary effects produced by a development intervention on its beneficiaries, directly or indirectly, intended or unintended.
4. **Effectiveness** is the contribution made by the project's results/outcomes to the achievement of the project purpose. Effectiveness describes how well the results achieved have furthered the attainment of the intervention purpose both in quality and in quantity. It includes also catalytic and synergistic effects among project components, as well as political, institutional, natural, social economic/financial, cultural factors which supported or impeded project implementation
5. **Efficiency** is used to assess if the results were obtained at reasonable cost, i.e. how well means and activities were converted into results, and the quality of the results achieved. It describes the relationship between the produced outputs and the utilized resources.
6. **Coherence** is used to assess if the outputs and activities, in this project mainly research related ones, are still in line with the original objectives of the programme as well as with national goals, UNDP mandates and key issues of the Rio Conventions.
7. **Sustainability** is the likelihood of a continuation in the stream of benefits produced by the project after the period of external support has ended. Key factors that impact on the likelihood of sustainability include: (i) ownership by beneficiaries; (ii) policy support/consistency; (iii) appropriate

technology; (iv) environment; (v) socio-cultural issues; (vi) gender equity; (vii) institutional management capacity; and (viii) economic and financial viability.

The framework illustrated in Fig. 1 is integrated into the Output Matrix provided within the TOR, which has been expanded by the consultant in regard to the major activities and levels of analysis to be conducted during the evaluation, as shown in Table 1 on the following page. The factor coherence has been added to the original table.

The evaluation matrix below highlights the major questions to be addressed and the resources to be used to evaluate the project design and the performance of the project.

Table 1: Evaluation Matrix

Criteria	Main questions	Main Evaluation Activities	Methodology and Level of Analysis
Project formulation (Feasibility, Relevance, Coherence)	<ul style="list-style-type: none"> - Were the project's objectives and components clear, practicable and feasible within its time frame? - Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed? - Were lessons from other relevant projects properly incorporated in the project design? - Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval? - Were adequate project management arrangements in place at project entry? - Is gender adequately considered 	<ul style="list-style-type: none"> - Analysis of logframe - Assessment of available capacities (Human, technical, social, economic, political, institutional) and comparing them to the capacities as required by the project design - Listing lessons learnt of projects considered as similar and relevant and comparing them to project implementation - Listing of partnership arrangements and the roles of responsibilities assigned, listing the date when arrangement were made, and if changes happened - Analysis of PMU arrangement, type and date - Gender analysis 	<ul style="list-style-type: none"> - Project report and quarterly / annual report to follow up logframe and its changes, including results, objectives and indicators - Project document and reports, available statistics if necessary, stakeholder interviews - Reviewal of the project reports (evaluations) of former projects, to be selected an suggested by project staff - Analysis of project document, interviews with PMU and partners - Project document, interview of PMU - Project Document, community analysis
Project Implementation (Effectiveness, efficiency)	<ul style="list-style-type: none"> - The logical framework used during implementation as a management and M&E tool - Effective partnerships arrangements established for implementation of the project with relevant stakeholders involved in the country/region 	<ul style="list-style-type: none"> - Context analysis: comparing how and how often and where actions indicated by results and indicators were addressed in project implementation - Institutional analysis: Types of partnerships, stakeholder involvement, stakeholder satisfaction 	<ul style="list-style-type: none"> - Project reports, interviews with PMU and with EPLUA, UNDP and community members - Community interviews

	<ul style="list-style-type: none"> - - Lessons from other IDMPs (e.g., same focal area) incorporated into project implementation Feedback from M&E activities used for adaptive management. 	<ul style="list-style-type: none"> - Listing of major lessons from other IDMPs and tracing them in project implementation. Stakeholder Satisfaction - Listing of major project actions and efforts in regard to time, cost and work capacity efficiency <ul style="list-style-type: none"> a. Comparing assigned dates of achievements with realized dates of achievements, as for instance on income generation, interventions for land rehabilitation etc. b. Comparing proposed budgets with real expenses and labor input, comparing outputs with expenses and labor input, comparing the whole with possible alternative resource utilization <p>Listing of project successes and failures</p>	<p>Review of the respective project documents and community interviews</p> <p>- Reviewing project reports, particularly cost and action plans, benchmark analysis, cost-benefit analysis, project staff interviews</p>
Project results (impacts and sustainability)	<ul style="list-style-type: none"> - ownership, - mainstreaming, - scalability - sustainability - catalytic role - impact. 	<ul style="list-style-type: none"> - Will the outputs/outcomes lead to benefits beyond the life of the existing project? The following questions are considered as indicators: - Were the actions and results owned by the local partners and stakeholders? - Was capacity (individuals, institution, systems) built through the actions of the project? - What is the level of contribution of the project management arrangements to national ownership of the set objectives, results, and outputs - Were the modes of deliveries of the outputs appropriate to promote national ownership and sustainability of the results achieved? - Which is scalability and replicability of the project? - How wide-reaching are catalytic impacts of the project? 	Mainly report studies, PCU and community interviews
Assumptions and risks (Coherence, effectiveness)	Robustness and logic of stated assumptions and risks,	<p>Generic assessment, if listed assumptions and risks were relevant</p> <p>Assessment of coherence between assumptions and risks and logframe</p> <p>Comparison of major risk assumed in the prodoc with later experiences by the project staff and description of measures taken by the project to address these risks</p>	<ul style="list-style-type: none"> - Review of list of assumptions in ProDoc - Stakeholder interviews about risks that did occur - Stakeholder and PMU interview about mitigation measures

will be further tools. The assessment will take into account all factors which facilitated or impeded the process, such as political, institutional, natural, social economic/financial, cultural factors.

Impact analysis, Ownership and Sustainability

The impact analysis will be based on the Millennium Ecosystem Framework and the livelihood frameworks, which show, how interventions enabled stakeholders to improve the governance of their environment and in which way this improved capabilities of society also to fulfil their needs on a higher level than before.

These are for instance:

- Being able to be adequately nourished.
- Being able to be free from avoidable disease.
- Being able to live in an environmentally clean and safe shelter.
- Being able to have adequate and clean drinking water.
- Being able to have energy to keep warm and to cook.
- Being able to use traditional medicine.
- Being able to continue using natural elements found in ecosystems for traditional cultural and spiritual practices
- Being able to cope with extreme natural events caused by climate change such as floods and droughts
- Being able to make sustainable management decisions that respect natural resources and enable the achievement of a sustainable income stream

The capabilities themselves gained through the interventions also generate ownership and sustainability insofar, they improve capacities by communities themselves to ensure these resources.

Besides this, the following aspects of project impacts will be analyzed:

- Distributional Impacts of the project
- Impacts on Vulnerability and Resilience
- Linkages of Marketing and Livelihood Projects to Land Degradation

Gender related impacts of the project will refer to the following issues:

- Equity of access to and participation in all project activities within project design
- Equity in project benefits in respect to access to Resources, Endowments
- Impacts of the project on gender related labor distribution
- Impacts of the project on gender-specific capabilities (Sen)
- Impacts of the project on gender-related questions of dignity
- Impacts of the project on specific gender related vulnerabilities, such as pregnancy, lactation, menopause, child-raising duties etc.

Project Design

- Prioritization of Budgets in the project
- Bottom-up approach

- Stakeholder involvement
- Quality of Risks and Assumptions made
- Is Logframe adequately used in project management
- Are indicators appropriate?

Sustainability

For the Sustainability criterion, the following components will be assessed:

- environmental, technical, economic / financial, social, institutional viability
- social Support and governmental commitment
- Sustainability risks
- Remedial measures

3. Questionnaire guideline

Focussed Group interviews will be the major tool. For that, the following questionnaire guideline will be used.

Project design:

- Which changes were conducted in the project since its started.
- Overall satisfaction with partners and collaborating institutions. Did they fulfill their responsibilities? How is satisfaction vice versa?
- Composition and collaboration within PCU
- Was logframe considered as useful for project management activities, indicators SMART?

Result Area 1:

- Checking offices equipment with furniture, internet, transport facilities.
- Checking reports on project staff recruitment
- Checking reports on training on monitoring and reporting, focused interviews with staff on their satisfaction with the training.
- Interview with project management and technical committees on Regional and Woreda levels about their roles, responsibilities, experiences, satisfaction and lessons learnt in the project.
- Interview of trainees in respect to vector management trainings, the contents, trainers, materials, knowledge gained.
- Interviews with stakeholders on school club establishment, which activities conducted, satisfaction of stakeholders.

All office equipment was present, much of it still in use, some of it was locked in a room to secure it after the project was over.

The project staff was recruited from EPLUA, since EPLUA is the implementing agency for the project. An earlier intention to hire a UN volunteer was abandoned.

Result Area 2:

- Check documentation on traditional natural resource conservation practices of Afar community, how was it received, which parts of the traditional practices have been revitalized / maintained by now / in by-laws?
- Discuss with project staff on community mobilization efforts, what was easy, what was difficult? Were all relevant stakeholders involved?
- To which places were exchange visits conducted and what was learnt? Assessment of user satisfaction.
- Check LEAPs, (Local environmental Action plans – Kebele level). Which difficulties were overcome during drafting of LEAPs, what was easy, as how useful are LEAPs considered by community members and decision makers?
- Check EMPs (environmental management plans – Woreda level). Which difficulties were overcome during drafting of LEAPs, what was easy, as how useful are EMPs considered by community members and decision makers?
- Components, innovative and traditional elements of LEAPs and EMPS, how do LEAPs and EMPs link, how much of it was implemented?
- Check SLM on the field. Feasibility and robustness of structures in the field.. In which way was soil and water conservation etc. improved? Community satisfaction
- Check implementation of area closure, weed(bush management, in particular efforts to control parthenium, prosopis, invasive acacias (vern. name: gerento). Which were inputs,

which were the areas of implementation and how large, how effective and sustainable was intervention?

- Check solar panels, capacities, status, beneficiaries, stakeholder satisfaction
- Check irrigation structures, how robust, which capacities, beneficiaries, stakeholder satisfaction
- Check impact of interventions on grazing rotations, conservation, livelihoods, stakeholder satisfaction
- Check action plan for soil and water management. Which are the innovations compared to earlier management? What was achieved on the ground so far? Community satisfaction.
- Check type, status and capacities of fodder banks, beneficiaries, stakeholder satisfaction
- Check livestock market centre in Awra, how many beneficiaries, capacities, physical and financial turnover rates, other benefits, how many stakeholders benefit, general satisfaction.
- Check PV systems
- Check local guidelines for sustainable livestock production, stakeholder satisfaction with relevance and usefulness
- Check roof water harvesting systems at schools – capacities, materials
- Check mud houses, stabilities, replication rates, interest of stakeholders
- Check water supply facilities (hand pumps), how many beneficiaries and their satisfaction
- Check capacity building and training materials. Which needs were addressed. Who designed training materials, who were the teachers. Satisfaction of users with materials and teachers.
- Training components and contents to DAs, experts on Woreda and regional level. Were they well selected, were they satisfied, what did they learn, and how did they implement what they learnt?
- Who came from EPA / Mekele University for training. and what did they deliver?
- Collaboration with UNCCD NFP and ANRS strengthened and improved?
- Major lessons learnt – Document and Communities. What was learnt, how, with which results? Do communities agree with conclusions in the report?
- Check Draft proposal SLM/NRM by NGOs. Which were NGOs involved, which training did they receive?
- Proposals ready for GEF SG submission? How many have been submitted, how many grants have been received?
- Check action plan for sustainable fuel / woodland management. Which are the innovations compared to earlier management? What was achieved on the ground so far? Community satisfaction.

1. OUTPUTS (DELIVERABLES) AND TIMEFRAME

Below there is a listing of the required activities and expected outputs (deliverables), based on the objectives and scope of work stated above, respective timelines/deadlines and number of working days:

Schedule	Timeline
<ul style="list-style-type: none"> - Review of documents, evaluation of project reports in regard to the framework presented in Table 1. - Delivery of Questionnaire guidelines and agenda of meetings and reports submission time plans - Planning of meetings with senior Bureau Officials about 10 to 20 days ahead by phone or email through the PMU, UNDP CO and EPLUA on optimum timing and logistics - Start of writing inception report and preparation of power point presentation 	February 16/17 - homebased
Travel to Addis Ababa – Introduction to UNDP office, arranging logistics for flight to Semera, reviewing best practices document	February 19
Flight to Semera – introduction to Project Officer Mr. Assefa, who is giving presentation on project activities.	February 20
Introduction to Director Mr. Qellema, planning logistics for field trips Visit to Bureau of Water Resources and Bureau of Cooperatives in Semera. Finalization and Submission of Inception Report	February 21
Trip to Mille – staying overnight in Chiffra	February 22nd
Field visit in Chiffra – Technical Committee meeting on Woreda level	February 23rd
Travel to Awra, field and Technical Committee meeting – overnight in Chiffra	February 24th
Travel to Awa, field and Technical Committee meeting – overnight in Chiffra	February 25th
Return to Semera, meeting with Regional Committee members there	February 26th
Meeting with other partners in Semera	February 27th
De-briefing at EPLUA	February 28th
Flight Semera – Addis Ababa	March 1
Debriefing at UNDP	March 3
If appropriate – return to Semera for Regional Meeting	March 6 and 7
If appropriate, another field visit to Dewa	March 8
Report Writing	March 2, 4, 5, April 1-4
Submission of First Report Draft	April 5
Accommodation of comments and submission of Final Report	May 2

Persons Met

Ababu Anage – UNDP Addis Ababa

Sinkenesh Beyene – UNDP Addis Ababa

Dr, Bettina Woll – UNDP Addis Ababa

EPLUA

Assefa Biru. Project Manager

Dr. Celemma, DG of EPLUA

Ato Biruk, Project Officer

Woredas

Mille: Technical Committee Members

Ali Witika - Head for Pastoral and Development Office

Aisha Mohammed – Head of Education

Nuru Ibrahim – Head of Health Office

Frew Bekele – Focal Point for Mille Project.

And Communitteee members

Chifra

Technical Committeee members

Mohammed Duba - Head for Water

Wagris Hafa –DA for pastoral extension

Ato Tamasgen – DA

Ato Mekonnen – DA

And community members

Ewa

Technical Committee members:

Tesfaye Minase – Focal Point

Indris mohammed – Field Officer

Amin Alah - Administrator

Dr Mustafa Mohammed – Education Office Head

Dessalegn Hailu – Delegate for Water Head

And others

And community members

Awra

Technical Committee

Tesfaye Berhanu – Focal Point

Mohammed Awal - Head for Health issues

Endris Humada – Delegarte for Administration

Ahmed Ese - Head of Education

Ali Mujahid Hhamadu – Head of pastoral Office

Qadir Robito – Micro Enterprise Development Head

Saada Qadir – Head for Women Youth and Children Office

Luba Mujahidin - Capacity Building

And community members

Line Bureaus

Pastoral office – Mohammed Mahmud – NRM and protection - Head of Core Process

Bureau for Cooperatives :

Ousman Anesa – Head

Saada Muhamed – Experts for cooperatives

Eshetu Said – expert for export.

Water Bureau

Bureau for Economics and Finances

INDIVIDUAL CONSULTANT PROCUREMENT NOTICE



Date: November 27, 2013

Reference: IC/2013/155

Country: Ethiopia

Description of the assignment: Consultancy on Terminal Evaluation of Afar Integrated Dry lands Management Project

Unit: Millennium Development Goals

Project: Poverty Reduction

Duty Station: Addis Ababa with some travels to project area

Period of assignment/services: 25 working days

Proposal should be submitted by our secured e-mail: procurement.et@undp.org on or before Wednesday December 4, 2013.

Contact Person : Endalkachew Kassa – Procurement Officer
Name of Office: United Nations Development Programme (UNDP)
ECA Compound Old Bld. 6th floor
Addis Ababa, Ethiopia

P.O. Box: 5580

Telephone

Fax +251 11 5514599 / +251 11 5515147

Any request for clarification must be sent in writing, or by standard electronic communication to the address or e-mail indicated above *the Procurement specialist or assigned personnel for this task* will respond in writing or by standard electronic mail and will send written copies of the response, including an explanation of the query without identifying the source of inquiry, to all consultants.

1. BACKGROUND

The Afar Integrated Dry land Management Project (AIDMP) is a scale-up of a pilot project implemented in Mile Woreda (the 'Mille Integrated Dry land Management Project' (also known as the "Mille Project")), Afar National Regional State (ANRS), from 2006 – 2008. These two projects are part of Ethiopia's contribution to the implementation of the United Nations Convention to Combat Desertification (UNCCD). Within its support to the Traffic Initiative, the Royal Government of Norway provided funds to UNDP's Dry lands Development Centre (DDC) to support the implementation of AIDMP in Ethiopia, as a component of the global Integrated Dry lands Development Programme (IDDP) that DDC executes within the framework of UNCCD.

For detailed information, please refer to the TOR in Annex 1

2. SCOPE OF WORK, RESPONSIBILITIES AND DESCRIPTION OF THE PROPOSED ANALYTICAL WORK

The main task of this consultancy service is to thoroughly evaluate and produce evaluation report on the design, implementation, and likelihood of possible impacts and possible scalability of the Afar Integrated Dry lands Management Project.

For detailed information, please refer to TOR in Annex 1

3. REQUIREMENTS FOR EXPERIENCE AND QUALIFICATIONS

Academic Qualification:

- Must have at least a higher (Master's) degree or equivalent in Dry Lands Management, Climate change Adaptation, Rural Livelihoods/Development, Natural Resources Management, Development Studies, Sustainable Development, Agricultural Economics or other relevant field.

Experience:

- Must have a minimum of 10 years of relevant experience in the above mentioned fields.
- Having previous experience in evaluating programmers/projects for UNDP or other UN/multilateral agencies is a requirement;
- Having relevant experiences in East Africa will be an added advantage

Competencies:

a. Core Competencies:

- **Integrity:** upholds the principles of the United Nations Charter; demonstrates the values of the United Nations, including impartiality, fairness, honesty and truthfulness, in daily activities and behaviors; acts without consideration of personal gain; resists undue political pressure in decision-making; does not abuse power or authority; stands by decisions that are in the Organization's interest even if they are unpopular; and takes prompt action in cases of unprofessional or unethical behavior.
- **Professionalism:** knowledge and understanding of UN's operational context, particularly in the fields of common services, joint premises and common procurement. Ability to identify key procedures and issues, conduct data collection, operational analyses and discussions with decision-makers to propose solutions to these issues. Ability to apply sound judgment in the context of assignments given, and work under pressure. Shows persistence and remains calm in stressful situations. Shows pride in work and achievements, demonstrates professional competence and mastery of the subject matter. Responds positively to feedback and different

points of view. Conscientious and efficient in meeting commitments, observing deadlines and achieving results.

- **Respect for Diversity:** works effectively with people from all backgrounds; treats all people with dignity and respect; shows respect for, and understanding of, diverse points of view and demonstrates this understanding in daily work and decision-making; examines own biases and behaviors to avoid stereotypical responses; and does not discriminate against any individual or group.
- **Planning and Organizing:** develops clear goals that are consistent with the terms defined here. Identifies priority activities and assignments, and adjusts them as required. Allocates appropriate time and resources for completing work by foreseeing risks and developing contingency plans accordingly. Monitors and adjusts plans as necessary, and uses time effectively.
- **Communications:** speaks and writes clearly and effectively; listens to others, correctly interprets messages from others and responds appropriately; asks questions to clarify, and exhibits interest in having two-way communication; tailors language, tone, style and format to match audience. Keeps confidential information undisclosed
- **Accountability:** takes ownership of responsibilities and honours commitments. Delivers assigned tasks within prescribed time, cost and quality standards. Operates in compliance with organizational regulations and rules. Takes personal responsibility for his/her shortcomings.

b. Functional Competencies:

- The consultant (s) must have strong proven capacity and expertise in evaluating multifaceted programmes/projects and results-oriented monitoring and evaluation
- Knowledge of the national policy and legislation in the field of Sustainable Land Management will be a distinctive advantage
- Demonstrated ability to assess complex situations in order to succinctly and clearly distil critical issues and draw forward looking conclusions.

c. Language Competencies:

- Must be fluent in English language (both speaking and writing)

4. DOCUMENTS TO BE INCLUDED WHEN SUBMITTING THE PROPOSALS.

Interested individual consultant (s) must submit the following documents/information to demonstrate their qualifications:

1. Technical Proposal:

- Proposal Submission Form
- Explaining why they are most suitable for the work
- Provide a brief methodology on how they will approach and conduct the work

2. Financial proposal

- **Total lump sum**
- **Cost breakdown**
- **Payment conditions associated with deliverables**

3. P 11 Form and at least 3 references

5. FINANCIAL PROPOSAL

Lump sum contracts

The financial proposal shall specify a total lump sum amount, and payment terms around specific and measurable (qualitative and quantitative) deliverables (i.e. whether payments fall in installments or upon completion of the entire contract). Payments are based upon output, i.e. upon delivery of the services specified in the TOR. In order to assist the requesting unit in the comparison of financial proposals, the financial proposal

will include a breakdown of this lump sum amount (including travel, per diems, and number of anticipated working days).

Travel:

All envisaged travel costs must be included in the financial proposal. This includes all travel to join duty station/repatriation travel.

6. EVALUATION

The individual consultants will be evaluated based on the Cumulative analysis method.

When using this weighted scoring method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as:

a) responsive/compliant/acceptable, and

b) Having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.

** Technical Criteria weight; [60%]*

** Financial Criteria weight; [40%]*

Only candidates obtaining a minimum of 70 point and above would be considered for the Financial Evaluation

<i>Criteria</i>	<i>Weight</i>	<i>Max. Point</i>
<i><u>Technical Competence</u></i>	<i>60%</i>	<i>100</i>
<ul style="list-style-type: none"> <i>Criteria A:</i> minimum level of education and work experience 	20%	(20)
<ul style="list-style-type: none"> <i>Criteria B:</i> Understanding of scope of work and methodology 	60%	(60)
<ul style="list-style-type: none"> <i>Criteria C:</i> Analytical and reporting skills 	20%	(20)
<i><u>Financial</u></i> (Lower Offer/Offer*100)	<i>40%</i>	<i>100</i>
<i><u>Total Score</u></i>	<i>Technical Score * 0.6 + Financial Score * 0.4</i>	

Note: Submission of Technical and Financial proposal is mandatory. Failing to submit one of the proposals will be automatically disqualified.

Submission Through our secured email

- The proposal must be prepared in English. Failing to do so will make the proposal automatically disqualified
- You can send your proposals through our secured email: **procurement.et@undp.org**

- Your proposals shall be sent in a separate email as Technical and Financial proposals.
- Your proposals shall be sent in a **separate email** as Technical and Financial proposals under subject line:
 1. For Technical: Job # 41472 - Technical Proposal – AIDMP - [\[insert your name\]](#)
 2. For Financial: Job # 41472 - Financial Proposal – AIDMP - [\[insert your name\]](#)
- All prices/rates quoted must be in **USD and exclusive of VAT and all taxes**, since the UNDP is exempt from taxes.

ANNEX

ANNEX 1: TERMS OF REFERENCES (TOR)

ANNEX 2: TECHNICAL PROPOSAL COVER PAGE AND SUBMISSION FORM

ANNEX 3: FINANCIAL PROPOSAL COVER PAGE AND SUBMISSION FORM

ANNEX 4: GENERAL CONDITIONS OF CONTRACT FOR IC

Annex 1

TERMS OF REFERENCES (TOR)

Terminal Evaluation of Afar Integrated Dry lands Management in Ethiopia

1. Background

The Afar Integrated Dry land Management Project (AIDMP) is a scale-up of a pilot project implemented in Mile Woreda (the 'Mille Integrated Dry land Management Project' (also known as the "Mille Project")), Afar National Regional State (ANRS), from 2006 – 2008. These two projects are part of Ethiopia's contribution to the implementation of the United Nations Convention to Combat Desertification (UNCCD). Within its support to the Traffic Initiative, the Royal Government of Norway provided funds to UNDP's Dry lands Development Centre (DDC) to support the implementation of AIDMP in Ethiopia, as a component of the global Integrated Dry lands Development Programme (IDDP) that DDC executes within the framework of UNCCD.

The AIDMP is being implemented in 5 Woredas (Aura, Cziffra, Dewed, Ewe, and Mille) by EPA's regional arm in Afar, the Afar Environmental Protection and Land Administration and Use Agency (EPLAUA) in collaboration with the technical, administrative and coordination support from federal EPA, MOFED (Ministry of Finance and Economic Development) and UNDP.

Project Objectives

To improve the livelihood and coping mechanisms of pastoral communities of 5 Woredas by enhancing their capacity to sustainably manage and use natural resources through the implementation of on the ground adaptation activities identified in the 5 Woredas.

2. Project Evaluation

The UNDP Evaluation Policy states that: "Project evaluations assess the efficiency and effectiveness of a project in achieving its intended results. They also assess the relevance and sustainability of outputs as contributions to medium-term and longer-term outcomes. Terminal Evaluations (TE) provide a comprehensive and systematic accounting of performance at the end of the project cycle, considering the totality of the effort from project design, through implementation to wrap up, also considering the likelihood of sustainability and possible impacts. The target audience for a terminal evaluation is Dry Land Development Centre, project partners and beneficiaries, UNDP CO and UNDP Evaluation Office,

2.1 Objectives of the evaluation

The objective of the evaluation is to:

- Provide a comprehensive and systematic accounting of performance;
- Assess project design, implementation, likelihood of possible impacts and possible scalability.

The International consultant should work closely with UNDP Ethiopia and with the Project Manager to carry out this consultancy. The International Consultant will be the Team Leader and one National Consultant also will be recruited.

2.2. Scope of the Evaluation

The following questions should be covered by the evaluation:

2.2.1 Project formulation:

Were the project's objectives and components clear, practicable and feasible within its time frame? Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed? Were lessons from other relevant projects properly incorporated in the project design? Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval?

Were adequate project management arrangements in place at project entry?

2.2.2 Assumptions and risks:

An assessment of the stated assumptions and risks, whether they are logical and robust, and have helped to determine activities and planned outputs.

Externalities (i.e. effects of climate change, global economic crisis, etc.) which are relevant to the findings.

2.2.3 Project implementation:

- The logical framework used during implementation as a management and M&E tool
- Effective partnerships arrangements established for implementation of the project with relevant stakeholders involved in the country/region
- Lessons from other IDMPs (e.g., same focal area) incorporated into project implementation Feedback from M&E activities used for adaptive management.

2.2.4 Project results:

Results as measured by broader aspects such as: country ownership, mainstreaming, scalability sustainability and catalytic role and impact.

2.2.5 Conclusions, Recommendations and Lessons

Conclusions should be comprehensive and balanced, and highlight the strengths, weaknesses and outcomes of the project. They should be well substantiated by the evidence and logically connected to the evaluation findings. They should respond to key evaluation questions and provide insights into the identification of and/or solutions to important problems or issues pertinent to EPLUA UNDP CO and Dry Lands Development Centre and Project beneficiaries

The evaluation report should provide practical, feasible recommendations directed to the intended users of the evaluation about what actions to take and decisions to make. The recommendations should be specifically supported by the evidence and linked to the findings and conclusions around key questions addressed by the evaluation.

The evaluation report should include, if available, lessons that can be taken from the evaluation, including best (and worst) practices that can provide knowledge gained from the particular circumstance (programmatic and evaluation methods used, partnerships, financial leveraging, etc.) that are Important for scaling up of the findings.

3 Expected Outputs

3.1. An inception report should be prepared by the evaluation team prior to the main evaluation mission. It should detail the evaluators' understanding of the project being evaluated and why, showing how each evaluation question will be answered by way of: proposed methods, proposed sources of data and data collection procedures.

3.2. A draft evaluation report, which includes the evaluation scope and method, findings, conclusions and recommendations. The report should cover the following five major criteria: relevance, efficiency, effectiveness, results and sustainability, applied to a) project formulation b) project implementation and c) project results.

3.3 A final evaluation report.

Annex 2 contains the sample outline report. The draft report is considered complete, in contractual terms, only when it has achieved acceptable standards.

4. Conduct of work

The evaluation consultant should be scheduled, providing an intensive 10 days for the consultant to hold interviews and visit project sites and 15 days for writing up the report. The TE should be planned far enough in advance to enable interviews to be properly set up, especially to request meetings with senior Bureau Officials. A detailed plan for the mission should be included in the TE inception report, which should be revised based on CO, project team, Environmental Protection and Land Use Agency(EPLUA) and Dry Lands Development Centre in Pretoria.

Field visits are expected to project sites or a select sampling if there are multiple sites. The decision on which sites to visit should be done jointly with the UNDP CO and project team in EPLUA.

Data analysis should be conducted in a systematic manner to ensure that all the findings, conclusions and recommendations are substantiated by evidence. Appropriate tools should be used to ensure proper analysis (e.g. including a data analysis matrix that records, for each evaluation question/criteria, information and data collected from different sources and with different methodology).

By the end of the evaluation mission and prior to submitting a first draft evaluation report, a wrap up discussion should be organized with the UNDP Ethiopia country office and project team to present initial findings and request additional information as needed. A template for the evaluation report will be provided.

Following the review of the draft evaluation report, the evaluation team should indicate how comments have been addressed in the revised evaluation report.

4.1 Reporting Arrangements

The consultants will submit an inception report and a draft report for comments to Dry Lands Development Centre, EPLUA and UNDP country office.

The inception report will provide details of the methodological approach to be used by the consultants to undertake the study.

A PowerPoint presentation (about 10 – 15 slides) covering the key points of the TE with the main findings will also be provided.

Only after incorporating and/or responding to all the comments the consultant will produce and submit a final report to UNDP CO and EPLUA

4.2 Consultant Competencies

The TE will be conducted by an independent consultant. The *Afar Integrated Dry lands Management Project* Management/ EPLUA will provide support in the field as may be required including making appointments with the required stakeholders and proposed interviewees. The consultant will be responsible for the delivery, content, technical quality and accuracy of the evaluation, as well as the recommendations. He/She will have a wide range of skills, as follows:

- Evaluation specialist with at least a higher degree in Dry Lands Management, Climate change Adaptation, Rural Livelihoods/Development, Natural Resources Management, Development Studies, Sustainable Development, Agricultural Economics or other relevant field;
- A minimum of ten (10) years of relevant work experience in the above mentioned fields`
Relevant experiences in East Africa will be added advantage;
- Proven expertise in evaluating multifaceted programmes/projects and results-oriented monitoring and evaluation;
- Previous experience in evaluating programmers/projects for UNDP or other UN/multilateral agencies is a requirement; previous experience evaluating dry lands management projects will be a distinctive advantage;
- Excellent analytical and reporting skills and fluency in written and spoken English are essential;
- Demonstrated ability to assess complex situations in order to succinctly and clearly distil critical issues and draw forward looking conclusions. Knowledge of UNCCD and other RIO Conventions for proper management of dry lands will be a distinctive advantage;
- Knowledge of the national policy and legislation in the field of Sustainable Land Management will be a distinctive advantage

5. Duration of the study (including final draft): 25 working days.

6. Evaluation Criteria

A consultant will have to score a minimum of 70% to be considered for the next step. Financial evaluation will be conducted for the qualified and responsive technical proposals (i.e 70% and above). Financial Proposal and Technical proposal will constitute 40% and 60% respectively. The responsive and qualified consultant with the highest combined rate will be issued a contract.

7. Submission of Technical & Financial proposals

a. The technical proposal should have as annexes:

(i) CVs of the Consultants expected to undertake the work; (ii) A list of related consultancies/ contracts carried out satisfactorily, supported by credentials; (iii) A confirmation of the capacity to deliver the completed work by the set timeframe; (iv) Detailed list of capacity in terms of human and material

resources of the organization is needed; (v) Proposed methodology of the study, and (vi) Copies of professional and trade licenses of the consultancy firm.

b. The financial proposal:

cross-referenced to the sealed technical bid should be a financial bid, giving the overall cost but with as much breakdown of costs as possible to allow analysis of reasonableness of the offer.