The Best Practices of the

Afar Integrated Dry Land Management Project

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Table of Contents Pages

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List of acronyms

AIDLMP	-	Afar Integrated Dry land Management Project
BoFED	-	Bureau of Finance and Economic Development
CC	-	Climate Change
CRGE	-	Climate Resilient Green Economy
EPA	-	Environmental Protection Authority
EPLUA	-	Environmental Protection, Land Use and Administration Authority
FAO	-	Food and Agriculture Organization of the United Nation
FDRE	-	Federal Democratic Republic Of Ethiopia
GDP	-	Gross Domestic Product
GHG	-	Green House Gases
GTP	-	Growth and Transformation Plan
IDDP II	-	Integrated Dryland Development Project II
MDG	-	Millennium Development Goal
MoFED	-	Ministry of Finance and Economic Development
NGOs	-	Non-Governmental Organizations
PARDB	-	Pastoral Agriculture and Rural Development Bureau
PARDO	-	Pastoral Agriculture and Rural Development Office
PASDEP	-	Plan for Accelerated and Sustained Development to End Poverty
PCDP	-	Pastoral Community Development Program
PMU	-	Program Management Unit
SSD	-	Support for Sustainable Development
SWC	-	Soil and water conservation
TOR	-	Terms of Reference
TVET	-	Technical Vocational Education and Training
UNCCD	-	United Nations Convention to Combat Desertification
UNDAF	-	United Nations Development Assistance Framework
UNDP	-	United Nations Development Program
UNEP	-	United Nations Environment Program
UNFCCC	-	United Nations Framework Convention on Climate Change
UNICEF	-	United Nation's Children Fund
US$	-	United States Dollar
WFP	-	World Food Program of the United Nation

Objectives and scopes of the documentation

The objective of the documentation of the best practices of the AIDLM Project is to review, identify, collate, analyze, synthesize and document lessons learnt, experiences and best practices. The document produced will be disseminated to regional and in-country stakeholders and other organizations of same interest to share lessons and make project development based on the good practices of the project implementation.

Methods of data collection

This report is prepared based on the information collected from different stakeholders at federal, regional state, district and kebele levels. The documentation work included conducting desk reviews and interviewing officials in United Nations Development Program (UNDP) Country office, conducting site visits, interview beneficiary communities and relevant government officials in Semera (the capital city of the Afar Region) and the 5 Districts. The data collection incorporated document review (from UNDP Country office & project offices) including reports, proposals, and stories prepared in the area. A semi-structured interview was conducted at UNDP Country & Project Offices, Afar Environmental Protection, Land Use and Administration Agency (EPLUA) and District field officers & focal persons. Field observations were made to areas where activities were implemented, during community interviews, and many more were collected from Ewa, Chifra, Mille Districts and the regional state project coordination office.

Document/report structure

The document starts with a brief executive summary. A brief introduction, short description/background on the national and regional contexts, national strategies and the relevance of the program to national policies/strategies and core problems of the target community are discussed in chapter 1 of the report. The brief description of the project, achievements and the lessons learnt are detailed in Chapter 2. Chapter 3 speaks about the best practices. The recommendations/key messages are presented in chapter 4 of the report, preceding the References list and annexes.

EXECUTIVE SUMMARY

In these times, climate change is acknowledged as one of the most pressing threats to development. Among the hardest hit countries, Ethiopia suffers much from drought and climate change induced impacts, in which the vulnerability to climate change impact is a function of several biophysical and socioeconomic factors. The mainstay of the country, agriculture, is entirely dependent on the timely onset, amount, duration, and distribution of rainfall, but critically undermined by drought and climate change. This requires the integration of climate and development planning. By doing so greenhouse gas emissions could be lowered, vulnerability to climate shocks could be reduced and then poverty reduction gains can be sustained.

The UNDP Ethiopia Country Office (UNDP-CO) has been engaged in and focused on disaster risk reduction, community resilience building, climate change adaptation and related issues. The AIDLM project, which is supposed to help the community in adaptation and mitigation to climate change, was financially supported by the Royal Norwegian Embassy and implemented by Afar EPLUA and UNDP. It was implemented in 5 Districts (Dewe, Mile, Chifra, Ewa, and Awra) of the Afar Regional State, dating January 2010 to December 2012. The objective of the project was to build the environmental management capacity and the Climate Change Adaptation Programs of the Districts and the Regional state. The beneficiaries of the project were the pastoral communities in the 5 Districts of Afar Region.

Staring from its conception, the target communities and the District line offices, have actively participated in the project implementation. The project was started from lessons learnt/best practices gained from the study tour visits to the neighboring Amhara Region, organized with full support from the AIDLMP. This has built ownership among the beneficiaries and the implementing partners. The promotion of gender seriously considered, and the participation of women was significant especially in soil and water conservation activities.

The project has accomplished many of the activities set in the project plan, and some were under good progress. Almost all of the accomplished practices were learning and could be scaled up to the locality and other areas.

A project management unit (PMU) was established at the Afar EPLUA Office in Semera and PMU offices were in place in all project districts with appropriate staffs. The human and material support for the offices has helped the good facilitation of project activity. The development of the Afar community indigenous natural resources management knowledge was assessed by a team of experts, and all the target districts have produced specific climate change adaptation plans of actions. This has helped to design project activities from the core problems of the target community.

Among the best practices provision of solar panel for electrification, the introduction of mud-brick houses which were considered as alternative building construction option in such dryland areas where deforestation is a key challenge, are best. The construction of mud-bricks house

was demonstrated in Afar by the AIDLMP. Brick made of mud, where everyone can produce at its vicinity, are good construction materials, with ecological, economical and social advantages as compared with wooden houses. The demonstration houses, by the IDLMP in Afar, will hopefully facilitate the implementation process of the unfamiliar building materials to the society by showing people the advantages they involve as compared to the traditional way of building. At this point, a reminder could be the policy issue on thinking this technology to make it part of the regional settlement program.

The promotion and provision of alternative energy source/solar panels was successfully accomplished. Health institutes, which used to have suffered a lot due to absence of electricity, were enjoying the multiple advantages of solar electrification. They were able to protect vaccines and drugs and accomplishing vaccinations at required times, and as well are able to serve night time medication. The health center thus equipped with solar panel served initiating outreach program for the surrounding kebeles. The introduction of such technologies will have other multiple advantages next to reducing environmental impacts, and such activities could be taken as best practices.

The establishment of fodder banks with the objectives of multiplication of different forages for distribution to the community members for use during forage deficit times of the year was successful and imperative. Some of the fodder banks have already served at least for one season and under reinstatement for another season, but few others were under establishment. This activity was an excellent choice and good performance, where it could be taken as best practice and can be scaled up including introduction of agro forestry seedlings in the same multiplication plots.

The introduction of different soil and water conservation activities, first-ever-activities, were successfully accomplished thanks to the good commitment from the beneficiaries and the experiences they obtained from experience sharing tours to the neighboring Worebabu district of Amhara Region. The physical structures including hill side terraces, trenches, water retention small basins and tie-ridges, check dams, and gabion re-enforced river training structures were very illusive and educative.

The promotion of water supply and small scale irrigation techniques will have unparalleled importance for dryland areas, as water shortage is the differentiating challenge in these areas. The activities started in the construction of hand dug wells (to be fitted with hand pumps) and the expansion and maintenance of irrigation structures have attracted the attention of the needy community. Once these structures are placed, many people will get multiple advantages and would improve the lives of more people. The establishment of market center, which was under progress, will have great support to the pastoralists. These activities, once completed, would significantly improve the coping capacity of the communities, and are suitable to such dry areas.

Enhanced use of early warning information in drought areas is a system that helps the provision of timely and effective information which allows individuals take action to avoid or reduce risk and prepare for effective response. The project which supports the dryland and pastoralists lives, shall escalate the use of early warning system (EWS) as major activity. The The AIDLMP had set the activity plan in a gender disaggregated manner. The monitoring of project activities has proved that the participation of males and females was found at a variable figure. Women actively participated in the soil and water conservation activities, outweighing male participation, but their role in trainings and some gender-flick activities is reported much lower than planned. Though the figures are not discouraging owing to the cultural imposition, the attention given appears, to be not focused. Therefore, the importance of gender analysis and the mainstreaming of gender issues would be crucial.

Naturally the project is ecologically well suited. But some activities, such as hand dug well construction, small scale irrigation, river training, market center construction, will have negative environmental impacts, if implemented without due care. In addition, some activities are attention grabbing in their nature, where environmental impacts are significant. Therefore, it is felt that these issues would have been addressed before the implementation of the program activities began. This would include the preparation of programmatic environmental assessment and development of environmental mitigation and monitoring plans for effective monitoring during the implementation of activities feared to have impacts.

Though the sustainability issue was at risk-free stage, there is the need to develop an exit strategy, which will include building the capacity of project implementers and the completion of unfinished activities such as the small scale irrigation, mud-brick house construction, shallow water well construction and market center establishment. The construction of these activities would demand some more time than the current project life, but more importantly the issue of managing these accomplishments would either boost or deny the sustainability of the project.

Chapter 1: BACKGROUND

1.1 General

Drylands, which include dry sub-humid, semi-arid, arid and hyper-arid lands, cover more than 41% of the earth's land surface and are home to 2 billion people, many of whom depend on natural resources, biodiversity and agro-biodiversity for their livelihoods. Drylands are defined by water scarcity and characterized by seasonal climatic extremes and unpredictable rainfall patterns. The drylands rural residents are mainly dependent on biodiversity for food production, fuel provision and other resources that are essential to survival. The most widespread land-use system in the drylands is pastoralism, which relies on a diversity of grasses and shrubs as key productive inputs. Pastoralism is the only feasible agricultural strategy and depends on herd mobility to track the extremely high seasonal variability of rainfall, vegetation and other resources.

Climate change is reported to be an important driver of ecological change in the world's drylands. It is projected that climate change will lead to a decrease in water availability and quality, while extreme weather events such as droughts and floods will increase in number and/or intensity. Rising temperatures and changing precipitation patterns are predicted to lead to an expansion of drylands worldwide. Climate change is predicted to reduce agricultural productivity overall in the drylands and this will have severe impacts on food security. Drylands are challenging environments where human ingenuity, knowledge systems, and careful use of resources are essential for survival.

Ethiopia suffers much from drought and climate change induced impacts, in which the vulnerability to climate change impact is a function of several biophysical and socioeconomic factors. The mainstay of the country, agriculture, is entirely dependent on the onset season, amount, duration, and distribution of rainfall, but critically undermined by drought and climate change. The drylands, where most of the Afar Region belongs, are highly challenged with scarcities to deliver expected and historical responsibilities to inhabitants, basically because of land degradation. With these deficits the communities are suffering seasonal shocks and historical disasters, demanding the involvement of outsiders.

To develop and pilot a range of effective community level adaptation mechanisms for reducing the vulnerability of Pastoralists and agro-pastoralists particularly women and children, the UNDP supported AIDLMP has been implemented in Afar since 2010. The project was managed by Afar EPLAU and UNDP as a scale up of the Phase I Mille Integrated Dryland Management Project, in 5 Districts of Afar Region to contribute against climate change impacts. As a knowledge organization, the UNDP hopes to upscale its contribution and impact on the policy dialogue in order to help ensure that Ethiopia is well informed on the opportunities and challenges open to the country in order to adapt to and mitigate climate change. This best practices documentation is produced to ease this purpose.

1.2 Basic Data

1.2.1 Country context

Located in the Easter Africa, specifically at the horn, Ethiopia is home of an estimated population of more than 84 million, with a total surface area of 1,104,300 square kilometers. The gross domestic product (in billion current US$) in 2010 was estimated at 29.7, with Gross Domestic Product (GDP) per capita (current US$) of 390 for the same year. The poverty index, population below national poverty line, is estimated at 39% of population. The key economic activities shared to the agriculture sector (which hosts more than 80% of the total population and 47.7% of GDP), the industry sector (which is at an infant stage and covers 24.3% of the GDP with manufacturing covers 5.2%) and the service sector (which shares 30% of the GDP).

Total pastoral area in Ethiopia is estimated at about 625,000 km2, which is 57% of the country's total area, of which the Afar Regional state comprise 52%. Ethiopia is a habitat for more than 120 threatened species with a forested area of 12.6% of land area (2008 report). The 2007 estimated Carbon Di Oxide (CO_2) emission (in thousands metric tons) is 6,504 and metric tons per capita is 0.1, which will reach 400 million metric tons of CO_2 equivalent in 2030 if the planned middle income economy is convened with traditional development strategies. The energy consumption per capita in the country (in kilograms oil equivalent) estimate in 2008 was 29.00. Ethiopia is a country exercising federalism as the fundamental political system organized in 7 regional states and 2 city administrations/councils.

1.2.2 The Afar Region and Target Districts

The Afar Regional State is located at the northeastern part of Ethiopia. The region, with an area of about 270,000 km^2 (CSA, 2008), is situated between $39^{o}34'$ and $42^{o}28'$ East Longitude and $8^{o}49'$ and $14^{o}30'$ North Latitude. The region shares borders with Tigray Region in the northwest, Amhara Region in the southwest, Oromia Region in the south, and Somali Region in the southeast. It also shares international boundaries with Djibouti in the east and Eritrea in the northeast. Administratively, the region is divided in to five zones and 32 Districts. The total population of the region is estimated to be 1,411,092, where 80% of the rural communities are classified as pastoralists and the remaining 20% agro-pastoralists (CSA, 2007). The major livelihood of the rural community in the region is livestock rearing which accounts about 90% with limited irrigation agriculture along the river basins and low-lying riverine areas. The Afar community engages in subsistence livestock production for its economic, social and cultural values.

The climate of the region is characterized as arid and semi-arid. It remains dry and hot throughout the year. The lowland "*kola*" zone covers 99.335% of the region with average annual temperature ranging from 23 to $33^{o}c$ with the hottest months reach up to about $45^{o}c$.

The region gets very little, irregular and erratic rains in two rainy seasons - *karma* (main rainy season), and *sugum* (short rainy season), bimodal throughout the region with average precipitation of 150 - 500mm/annum. This makes crop cultivation very difficult.

The project is implemented in Mille and Chifra Districts of Zone 1, Ewa and Awra Districts of Zone 4 and Dewe District of Zone 5. Mille District is located at 72 km from the regional capital (Semera) and at 520 kms from Addis Ababa on the way to Semera. The travel to the regional capital and to the rest of the Districts is through Mille. Chifra is 102 kms from Mille and 174 km from Semera, where as Ewa is 200 km from Semera in the same route with Chifra (35 kms from Chifra). Traveling with the same route to Ewa, Awra is located at 230 km from Semera and 160 kms from Mille. Dewe District is 190 km from Semera/Logia. All of the 5 Districts share almost the same natural resources base, same livelihood, same climate, etc. The location map is presented as Annex.

1.3 Relevance of the Project

Ethiopia has developed a land management strategy (National Conservation Strategy), which has been fine tuned to regional contexts, different environmental management, soil and water conservation and land use policies. The 5 year Ethiopian GTP, launched in 2010, explicitly addresses the sustainability of growth, at which environmental conservation as a vital role in sustainable development was addressed. Building a 'Green Economy' and ongoing implementation of environmental laws are among the key strategic directions to be pursued during the plan period" (GTP, 2010). At the same time, the Government of Ethiopia has initiated the Climate-Resilient Green Economy (CRGE) strategy to reduce the adverse effects of climate change and to build a green economy that will help realize its ambition of reaching middle income status before 2025. The green economy plan is based on four pillars: improving agriculture, protection and development of forest, renewable sources of energy, and modernizing and energy-efficient transportation and industrial systems.

The Afar Regional State, by its own, has conducted a study on the overall regional situation at central/regional state and district levels. Following the detailed situation assessment, the region has developed Climate Change Program of Action at the two levels, which addresses the pastoralist community and the dryland development options. All the five target districts have conducted a detailed situation assessment of their respective districts and developed district level Climate Change Program of Action. This has helped the formulation of the AIDLMP. The project components have high priority regarding mostly the dryland dependent people in the pastoral areas in the region. This shows the direct relevance of the project to core problems of the target community.

Chapter 2: THE AIDLM PROJECT

2.1 Brief Overview of the Project

The IDDP II is the framework through which the support of the UNDP Dry Lands Development Centre (DDC) is delivered to program countries, which is granted based on a 10 year planning cycle (2009 – 2018), and a five-year funding cycle, with the first cycle lasting from 2010 to 2014. It is implemented in Ethiopia, and other countries (currently operational in 17 countries in Sub-Saharan Africa and the Arab States). The Afar Integrated Dry Land Management Project (AIDLMP), which is regionally known as Integrated Dry Land Development Project II (IDDP II), is a scale-up of a pilot project implemented in Mille district (Afar Region of Ethiopia) during 2006 – 2008, which was known as 'Mille Integrated Dry Land Management Project'. This IDDP II, known as the AIDLMP in Ethiopia, has been implemented in 5 of the Afar Regional State, dating January 2010 to December 2012. The project aims to build the environmental management capacity and the Climate Change Adaptation Programs of the community/kebele, District and regional levels of the Afar National Regional State. This project has been seen as part of Ethiopia's contribution to the implementation of the United Nations Convention to Combat Desertification (UNCCD).

The project was operational with plans to significantly strengthen capacities of the government, communities, and other relevant stakeholders to respond to situations that threaten the lives and wellbeing of a significant proportion of the population in the five Districts. The program values that this requires rapid and appropriate action to ensure the communities' survival, care, protection and recovery while enhancing their resilience to shocks and leading to food security and sustainable livelihood. To achieve this outcome the project has been working with the specific CP Outputs.

2.2 Approaches of the project implementation

The Stand-alone Project Management

Staring from its conception, the project has been closely working with the target communities and the District line offices. Throughout its implementation the project used to start from lessons learnt/best practices gained from the neighboring Amhara Region, through experience sharing tours organized with full support from the AIDLMP. This builds an ownership among the beneficiaries and the implementing partners, which intern would bring sustainability. The integration of specific environmental management activities would further ensure sustainability. The project also considers the gender element of development and activities are implemented with this dimension, though gender analysis has not been conducted at the start of the project. The participation of women has been seen significant in soil and water conservation activities, where as the participation in trainings was very minimal.

The design of the project, the flexibility in identifying specific activities, the PMU and the nature of the project has been cited as at the truck during the implementation of the project. These all along with the very determined commitments of the UNDP CO & Regional Office, the District steering committee and

the Regional Project Coordinators had the thanked contributions for pushing up the project to reach where it is now.

As discussed below in the project accomplishment part, federal, regional and district level management organs has been organized and have been operational since the start of its implementation. The project has recruited full time staff at regional and district levels, in addition to focal persons working fully on the project implementation. The steering committee formulated at district and regional levels have also helped project implementation.

Project Integration and Synergy

As discussed above, the project is mandated to government offices at federal to district levels. All relevant sector offices are engaged to contribute to their technical expertise to specific activities to promote multi sectoral approach to climate change adaptation. This is perfectly suitable for a project to be sustainable. At district level this works perfectly, but at regional level many activities were delayed citing different factors, where integration could be mentioned. The integration of government offices shall be more strengthened. There have been seen integrations with Semera University, who is mandated in areas of research and education on drylands management, and have worked with the program at countable roles. But the integration with the university shall show a better stance including monitoring and visits of project activities and capacity building at the university premises. There are also integration with other NGOs like the PCDP, and SSID in the improvement of small scale irrigation schemes and river bank rehabilitation activities, which, could be rated as good.

The other important sectors that the project works with are the Research Centers (Semera Pastoralist and agro-pastoralists Research center, and Worer Agriculture Research Center), Gewane Agricultural Training College, Lucy Technical & Vocational Training College at Worer and EIAR. Sharing research and study results data, which is potentially archived from universities, colleges and research centers, encourages scientific enquiry, promotes innovation and potential ideas, leads to new collaborations between data users and data creators, maximizes transparency and accountability, and enables scrutiny of research findings, by reducing the cost of duplicating data collection and providing important resources for education and training The integration/cooperation could be designed based on assessments on how to work together, what to support and what to tap (the knowledge/resources) from these institutes. This could help the project contribute much more than what it has been doing now without involving these institutes.

The UNDP is working with many projects in the Afar Region and other Region of Ethiopia. The MDG-E, DRR and DRS in Afar and CwDCC in Kombolcha, Amhara do have similar points of focus. Working as an integral part would mean a synergy and will end up in a success. Best practices can be learnt from one project to the other and vise versa. Project implementers would be able to think of the projects as one and be working with a better pace, bringing in success. Therefore, the integration/bond created among UNDP Projects could be a success for the UNDP CO.

The UNDP is working with other UN agencies, some to mention are World Food Program of the United Nation (WFP), Food and Agriculture Organization of the United Nation (FAO), United Nations Children's Fund (UNICEF), etc. The differences in the project management systems are burdening project implementers at the regional level. Working as an integral partner is so important to share resources, for cross learning, and similar issues, but it will be good if the integration be to bring synergy. This could be possible through forming a forum for arranging monitoring and supports as a single-

mission agent. There is the need to bring a harmony in the project monitoring and evaluation modalities.

2.3 Beneficiaries and Implementing partners of the Project

The beneficiaries of the project were the pastoral communities in 15 kebeles of the 5 Districts (Mille, Chifra, Ewa, Awra and Dewe). The DAs and community leaders, district experts, regional experts and district & regional offices/bureaus, are also beneficiaries of the project.

The Ethiopian Government and UNDP are the major implementers of the AIDLM project in Afar Region. The project implementation has been in action in partnership between UNDP Ethiopia Office and Federal EPA. Ministry of Finance and Economic Development (MoFED) is the signatory and controls the project implementation and budget. The EPA of Ethiopia is a signatory and the project owner. In summary, the IPs of the project are Federal EPA, Afar EPLUA, and Dewe, Mile, Chifra, Ewa, and Awra *Districts* of Afar Region, and the project implementation responsibility is under Afar EPLUA.

At District level, all relevant sectors are the prime implementers of the project. The Project Management Units (PMU) at each District and at the Afar EPLAU are leading the project implementation. The PMUs which are managed by full time field officers, assistance officer along with project focal persons lead the overall project implementation at district level through coordinating technical project activities, administrative matters and financial management issues. The regional and district steering committees are in place and working on the implementation. The UNDP country office (with program analyst and team leader) and Regional Office as well as EPA (as the National Project Coordinator) are technically and managerially supporting the implementation of the project.

2.4 Achievements of Key Activities

The UNDP assisted AIDLM Program is being implemented to address community challenges and has accomplished the following activities, as discussed in outputs set at the final revised project document.

2.4.1 Output 1:- Institutional support for Integrated Dryland Management

Project management unit capacity built

The establishment of project management units and strengthening of project implementers was conducted, as a start up activity. These include the establishment of offices, recruitment of project coordinators and field officers and the establishment of project management units. The recently established Afar EPLUA and the five implementing Districts demanded intensive financial and material support, where by the project had handed all rounded supports. A project management unit has been established at the Afar EPLUA Office in Semera and in all project districts within the Pastoral Agriculture and Rural Development Offices (PARDO). At the regional level two project staffs (Project assistance coordinator and finance officer) have been placed and field officers have been recruited at all project districts. This has been easing the facilitation and support of implementers in up-scaling smooth implementation of project activities. Both the regional and district PMU offices were equipped with office furniture (including tables, chairs, shelf, filing cabinets, and office equipments such as desk top computers, printers, scanning machines, photo copier). This has, also, helped the good facilitation of project activities. The support in availing five motor bikes for the five districts has eased project implementation and the procurement of one car, supposed to assist the regional PMU, is under progress.

The project was led by a regional and district level steering committee and technical working groups. All relevant government offices were represented by office heads as member of the steering committee and relevant experts from these relevant offices as members of the technical committee. The offices which have been working as partners include the office of Women, Youth & Children Affairs, office of Cooperatives Promotion, office of Education, office of Health, office of Water resource, Mine & Energy, Office of Pastoral Agriculture & Rural Development (PARDO), and office of the district administration at district level and bureaus of same sectors plus Afar EPLUA at regional level. The regional management committee is chaired by the president and the secretary is Afar EPLUA and the District management committee is headed by the District administrator with secretary the PARDO head. The regional technical committee has been lead by Afar EPLUA and by the district PARDO at district level.

The CRGE Platform was created in all the selected project kebeles through organizing local support group, during general community gatherings. This has helped in creating consensus among the communities and advanced awareness of the community members on the project and project activities. The participation and contribution of the community during the implementation of the project activities have been agreed on, upon understanding the purpose of implementation of the detailed specific activities. Kebele level development committees have been established and community management plans prepared with full support from district technical committee and agreed with kebele representatives. This has enhanced the implementation of the project.

Integrated vector management supported

One of the major impacts of climate change on human health is creation of favorable condition for reproduction of vectors. This happens through creating favorable environment to disease causing micro organisms which threaten human health. The AIDLMP had supported the organization and staging of 2 days training for 30 community health workers (5 females and 25 males). The objective was to capacitate the CHWs in the fight against the spread and impacts of vector born diseases. The contents of the training, as read from the training manual, include climate change and vector born diseases, prevention and management mechanism of vectors, and control of vector born diseases. This has helped to enhance the capacity of the health workers on managing and controlling vectors and vector born diseases.

School environmental clubs established

The environment, where the project kebeles are in implementation, is very fragile, degraded, and the community inhabiting there are with low level of awareness about the relation between environmental degradation and climate change, and climate change and related impacts. To raise community awareness on these issues and on drylands management concepts, the AIDLMP has supported the establishment of 17 school environmental clubs. Volunteer groups were organized and involved in activities proved to keep the environment safer for living through development and conservation of natural resources. Environmental club establishment guideline (detailing organizational structure, roles and responsibilities of club members, types of activities to be done by environmental clubs, ways of information communication that the clubs use), tree seeds and gardening materials have been provided to the school environmental clubs at all project districts.

The Project management

The project has been administered across four administrative levels (Federal, Regional, District and Kebele), in line with government institutional set-up. As project management body two project steering committees (at regional and district levels) were formed, and a project management unit has been established at district level and regional levels. The 5 project offices with a strong back up from regional coordinators and UNDP country office have been fully working on the overall implementation of the project.

The project was initially planned to run for three years starting in 2010 and ending in 2012, but has been delayed for almost one year. This has demanded an extraordinary commitment from the respective actors, where the project coordinators/focal persons and the UNDP-CO & Regional Office were required to exert exceptional efforts. Due to the late launching of the project with a multiple of activities to be implemented within a short duration, the UNDP-CO (specially the Program Analyst and the Team Leader) were determined to exert all what they can, to make the project successful. The staffs have been working closely with the project coordinators at Semera through making telephone calls, field visit for technical back stopping and working on reports.

The district steering committee had met frequently to discuss the implementation of the project and visited the target kebeles, and conducted project implementation review meeting with UNDP-CO. Periodic project status reports (both physical and financial) have been prepared by focal personas and field officers at district level and compiled at regional level and then submitted to UNDP-CO and EPA, for final settlement.

Successive field visits have been carried out by program coordinators and UNDP and occasional visits made by the regional Bureau of Finance and Economic Development (BOFED) and district steering committees. The regional and district steering committees were frequently re-activated and supported by the UNDP staff and the regional PMU. In this regard, training was organized, by EPLUA in collaboration with regional BoFED, on monitoring and reporting and project management. The M&E trainees include project coordination unit staffs (project focal persons and field officers) and district relevant officials (PARDO heads, Administrators, finance and economic development office heads).

The success of the project is said to be because of the good performance of the focal persons and project officers, backed by the regional coordination office and UNDP staff, and also said that they deserve immense thanks for what they are doing.

Livestock market center establishment

The lack of competitive and accessible rural markets is a manifestation of dryland areas. Pastoralists sell livestock products and livestock to local and domestic markets through both formal and informal channels. In contrast to crops (where crop failure due to drought results in price increase) livestock destocking, in response to drought, results in price decrease due to a market flooded with poor quality animals. This has necessitated the establishment of standard market places. The development of markets is critical for economic growth and brings the benefits of market integration for the

pastoralists. Policies to build infrastructure and market institutions and regulations in the drylands can be designed explicitly to facilitate access to the poor. The establishment of these markets is proved to have multiple advantages including selling when the livestock are at good status (no weight loss), selling at better prices, distance travel for search of buyers reduced, which all lead in the improvement of the livelihood of the pastoralists.

The AIDLMP has planned to manage the establishment and construction of 2 standard market places at two needy districts. The standard markets will have compartments with sufficient size for separating a livestock from the other, water trough for the livestock to drink, shelter, vaccination crush and animal drug store, market information board, toilet for herders, taxing office, loading and unloading track, weighing balance and other elements based on the locality. In two project districts, the assessments of marketing systems establishment situation have been made by the regional PARDB, with the support by AIDLMP. Establishment and construction of the centers and related tasks under this activity result have been delayed due to dramatic change and sharp increase with frequent variation in the price of construction materials doubled by the poor estimate in budget allocation. The delay in budget release was also mentioned as the second reason. Though late, the establishment and construction of the two market centers was agreed between the Afar EPLUA and the regional PARDB. The budget within the AIDLMP will be utilized to cover the construction cost as much as it could, and the deficit is agreed to be covered by the regional PARDB.

During the formulation of this report, the preparation of the construction works is under progress, with the regional PARDB mandated to undertake the establishment and construction of the centers, for two market center with standards set by the regional PARDB and the regional urban development bureau. Following the discussion, a solution is made and the regional PARDB is working on the activity. But, there is a fear that this activity still costs some time beyond the project life.

2.4.2 Output 2: Sustainable Drylands Management practices promoted

Under this output, several activities, which are supposed to contribute to the management of the drylands have been accomplished. These include the introduction and promotion of alternative energy sources and alternative construction technologies, watershed management activities, and related actions. The accomplishments of these activities are detailed as below.

Alternative energy sources promoted

The impeding nature of the conventional development path, which results in a sharp increase in Green House Gas Emissions (GHG) and unsustainable use of natural resources, has to be turned out and replaced by environmentally friendly sustainable development strategies, which could end in sustainable growth. This could be achieved through building green economy strategy, where Ethiopia is taking the lead over the world. The AIDLMP has been working with this context and the promotion and provision of alternative energy source specifically provision of solar panels for electrification was planned and 5 solar panels systems have been supported to 5 health institutes, which otherwise used gasoline, as energy source. The AIDLMP has provided solar electric systems for a health center for ease of supporting human vaccination and electrifying health centers to enhance medication during the night times. As a result of this the health centers have been able to provide 24 hours service. This has improved the performance of the institutes and reduced health related risks of pastoralists. With the full support from the program a significant proportion of the communities have been trained in the use, management and maintenance of the solar electrification system, which will end in a sustained use of the system.

The health posts are supplied with 10 panels for a health post. The output of 1 solar panel is said to have been 130 watts, where 1 health post has been provided with 1300 watts, which will serve 1 deep refrigerator and more than 20 lumps. This will fully serve the entire electric requirement of a rural health institute. In areas where schools and health institutes are constructed at a nearby area, the schools have the chance to use electricity for teaching and mini-media purposes upon agreement with the health institute. Impressed by the outcome of such support additional solar panels are being procured for more health stations and rural schools. The rural schools thus equipped with solar panels, television and VCD/DVD will be able to get study center for school children and in promoting community dialogue, adult literacy etc. These will double the purpose of the solar electrification. The rural energy electrification techniques through the introduction of solar panels could be integrated with the regional settlement program. In this manner the technology could support social infrastructures and dwellings with a kind of subsidy.

Community mobilization and capacity building for watershed management

The indigenous knowledge of the Afar communities is under deteriorating, because of manmade and natural reasons. Revitalizing the deteriorated traditional natural resource conservation practices of the community is believed to play a major role in drylands management interventions. This could be possible through assessment and documentation, and revitalization of the priceless skills. Regional Task Force, which was a group of senior experts (from Semera University, Afar Pastoral and Agro Pastoral Research Institute and Afar EPLUA), was mandated to review and document the pastoral indigenous practices. Accordingly, the traditional conservation practices of the Afar pastoralists were assessed (based on review results of different secondary information), and the indigenous knowledge are documented. Some of the natural resources management activities implemented under the AIDLM were taken from the knowledge gained from the assessment.

For the implementation of the AIDLMP activity results, strong coordination and commitment from the target community was found critical. The activities demanded the all round active participation of the community. Therefore, community mobilization was considered as the cornerstone of the project implementation. For this purpose, 45 (8 Female and 37 male) Development Agents (DAs) and district experts, were trained on community mobilization in collaboration with PARDB. These experts and DAs have worked out on the community mobilization activities and were able to attract the commitment of the community.

The AIDLMP has supported experience sharing tours for community representatives, DAs, and experts at district and regional levels. The experience sharing visit was held in the neighboring Werebabo district of Amhara region. The tour had accommodated 65 attendants (7 female and 53 male). This has helped the project implementation to start from best practices. As well, for the effective implementation of the natural resource conservation practices, training was given to 50 (10 females and 40 male) DAs and district experts on technologies and techniques of soil and water conservation and management, in collaboration with PARDB. The contents of the training were watershed management, tree nursery establishment and management, and rangeland conservation and development.

Soil and water conservation activities promoted

The condition of drylands can be significantly improved by better and integrated management of the natural resources base. Many approaches to the management of the scarce resources are available and form the base of overall resource management in drylands, where water and soil management are at the center. Such measures include erosion control, water harvesting techniques, water storage and

conservation measures, afforestation to arrest soil erosion, improving ground water recharge, and intensifying agriculture using novel technologies that do not increase pressure on dryland water and soil. The AIDLMP has been designed in such a way to address such issues and has successfully accomplished a multiple of activities of better importance. The project has supplied different farm equipments for soil and water conservation activities, and also promoted the construction of watershed management activities.

Material support

Different hand tools including 400 spades, 500 hoes, 500 shovel, 414 knifes, 50 racks, 50 watering cane, 10 roles of rope, 10 measuring tapes of each 50 meters long, 25 carts, 5 motor Bikes , huge amount of gabions were procured and distributed to the 5 project districts.

Physical soil and water conservation structures

The achievements of the promotion and implementation of soil and water conservation activities in the 5 districts included the construction of 250 km soil and stone bunds and a variety of water retention structures (trenches and half-moon structures). The quality of the activities accomplished in many of the catchments, for a first ever activity, is exceptionally good, but, in some sites there is a need to further deal on the quality of the structures. The issue of the quality of these structures is more than necessary, for the reason that the failure of physical soil and water conservation activities will end in a much failure than without such activities.


River bank Rehabilitation in Chifra

As part of water and soil conservation activity, gabion reinforced river bank stabilization and gully reclamation activities have been conducted with better quality and standards. These river bank and gully reclamation structures are planned to be further reinforced by the plantation of vetiver grass, jatropha plant, fodder trees and grasses and sesbania & neem trees plantation.

The construction of the soil and water conservation activities was said to have been accomplished with a 50% community contribution, and was also proved that the community are very much encouraged to have taken part. Some community leaders have proved that though such activities are the very first techniques in their locality, they are now convinced of the importance/benefits in the fight against climate change induced life threatening situations. Therefore, the commitment they took in achieving the already constructed activities is hoped will continue even after the close out of the program, with a minimal coordination support from the local government. The participation of women in these activities was also very exceptional, and but the gender issue should be addressed in a way that females are not over burdened by home based and external activities. Some catchments areas like Bolotom of Chifra District are fenced and protected and others shall learn from such sites. In many sites water harvesting trenches have already started harvesting runoff water and gabion checkdams were seen filled with soil material proving that the trenches are retaining water and the gullies are on rehabilitation.

Future assignments to be carried over are the protection and maintenance of the constructed activities, proof of the quality of the structures (as seen in few sites), the maintenance of the structures after heavy rains, and the protection of the structures from roaming livestock. The quality issues include starting at the top of the catchment, over-sizing of structures which might lead to structure failure. In one site there are structures collapsed because of high rainfall and needs maintenance. Unprotected areas within the protected catchment, in other areas might expose the entire for floods, weak

basement and poor stone arrangements might end in structure failures. These need corrections in future activities.

Biological soil and water conservation

Biological water and soil conservation measures including the plantation of multipurpose trees (fodder trees, forage trees and grasses and fruits) promotion and plantation is waiting for the rainfall, and to be implemented in protected areas. Some catchments were ready for the implementation of biological soil and water conservation, but were not accomplished due to financial problems. The time when seedlings were planned to be raised, budget deficit forced the areas to cancel seedling production activities. But upcoming activities of the same nature will be conducted on closed lands and in areas where physical soil and water conservation activities are constructed.

Solid mud bricks: Alternative housing materials

To relieve forest resources degradation an alternative construction material was planned, and mud brick houses are under promotion. The project has provided mud-brick producing molds for all the five project areas and all of them are at demonstration stage, where people trained with the full support of the program are requesting additional molds for the production of the bricks. The construction of mud-bricks house is not new to other areas in Ethiopia, but the Afar community when first learnt, were surprised of the technology.

Bricks made of mud, where everyone can produce at its vicinity, are good construction materials, with ecological, economical and social advantages as compared with wooden houses. The specific advantages include reduced in deforestation, economical/low cost – reducing material and construction cost by half (needs further cost estimates), durable (serves many folds of years than wooden house), moderating temperature (highly reduce warming effects), and prevention of fire hazard.

The inputs for the production of a mud brick are soil of the best kind, straw and water. A simple and easy to manipulate by pastoralists, block mold, which the AIDLMP is promoting produces two blocks at a time. The size can vary based on further trials, but currently the size of a single solid mud block is decided to be 20 cm x 20 cm x 40 cm, where the implementation by the AIDLM is at demonstration level. This technique can be integrated with the current regional settlement program.

Rangelands rehabilitated

In pastoralist areas different factors led to overgrazing of vegetation and soil resources in the sensitive drylands. Most of the environmentally harmful effects of livestock production in dry areas occur around local water points and settlements. Grazing reduces soil cover and changes the composition of the vegetation. Both, heavy and light grazing can reduce the density of palatable perennial species, which are replaced by less palatable ones as their competitive ability declines. These all degrade the resilient capacity of the pastoralists in the time of drought and climate change. Pastoralists do have the practice of traditional enclosures of rangelands for in-situ conservation and rehabilitation of vegetation, which is a dry-season fodder reserve, an indigenous practice which has been revived by the AIDLMP. This system alleviates dry season fodder shortages and prevents land degradation through reducing soil erosion and deforestation. They help to enhance livelihoods, provide a vital safety net during dry seasons and droughts.

The AIDLM program, designed this way, had identified possible solutions in the rangeland management and development areas of the pastoral areas. The project was able to manage the closing of grazing areas to prevent roaming animals on rangelands and preserving for use during

drought times. More than 100 ha of land has been closed from interference of animals, and the grasses are being feed to animals on a cut and carry system or with a controlled grazing technique, whichever is easily accepted by the pastoralists. In some sites the closed areas are strengthened with soil and water conservation activities and will be over sown with improved forage grasses and planted with multipurpose tree species. Community awareness activities were performed and consensus was reached with communities to protect rangelands. Management bylaws were developed and agreed by all members, where violators are to supposed to be abided by the local laws and the new bylaws.

At the same time these areas were cleared of invasive trees such as *Acacia nubica* (locally named as Gerento), *Prosopis* and *Parthenium* to allow beneficial plants grow comfortably, and grasses have now started regenerating. Accordingly, more than 50 hectares of rangelands were cleared of the invasive plants. The program has also conducted training on the revitalizing traditional shifting grazing techniques, where 230 males and 90 female pastoralists took part.

Improving Livestock production and productivity

The improvement in the production and productivity of livestock could be accomplished through improving the feed supply condition (where rangeland management is the main discussion point in drylands) and the health condition of the livestock. The supply of water for livestock is another key factor (not discussed in this report) in improving livestock contribution for pastoral communities. The AIDLMP has planned and accomplished a variety of tasks to help the community in improving the livestock production and productivity.

Training was given to 30 community animal health workers (plainly named Para-vets) at 15 kebeles (all men), and were provided with full veterinary kits. The AIDLMP has provided vet drugs to the pastoralists in the project districts. At the same time the project has implemented the establishment of fodder banks, which are known as forage multiplication areas. The main objective of establishing fodder banks was multiplication of different forages for distribution to the community for use during forage deficit times of the year. Five fodder banks are established near perennial rivers, with some showing very good performance. *Alfalfa*, *Panicum* and *Rhodes* grass have been grown with irrigation and in some sites grasses distributed to pastoralists. Some of the fodder banks have already served at least for one season and under reinstatement for another season, but few others are under establishment.

Water supply and sanitation improvement

Among the different impacts of climate change, drinking water shortage is the very first and series problem in all kebeles of the project districts. The project had planned the construction of 20 hand dug water wells to be fitted with hand pumps. The main advantages of constructing the shallow wells are:

1. Water fetching related risks reduced, specially women will be relieved from hardships of walking long distances & risks,
2. The water fetching time will be reduced drastically, and women will get enough time to work on other businesses in supporting their family,
3. The health of the households family members will be improved easing the production capacity of the families. Currently the target communities were forced to drink unprotected river water sources which had been compromising their health resulting in unhealthy and lead to low production capacity.
4. Children/students will be able to attend schools owing to the improvement in their health.

5. Conflicts due to water use will be reduced,
6. The health condition of animals in the villages will, to some extent, be improved and veterinary related costs reduced accordingly.


Shallow water well maintenance at Wo'ama

Accordingly, 20 hand pumps have been procured and distributed to the project districts. The construction of the shallow/hand dug wells is under progress in all districts with some secured the required water yields. Others are still digging the wells, and upon securing sufficient water, the wells will be fitted with the hand pumps. In Chifra District the maintenance of Wo'ama borehole water well (initially constructed by the regional water bureau) has been completed and the communities are enjoying clean and safe water.


Water well serving the community

The other activity plan, in this regard, was the construction of 10 roof water harvesting structures, which, were supposed to be worked out at schools. The harvested waters were planned for use for school (students and teachers) domestic purpose and for school based gardening. Consequently, 9 tanks, of 3000 liter capacity each, have been distributed to the selected schools. The installation of the water harvesting structures is expected to be completed in due time.

The tasks to be carried over will be the completion of the water supply schemes (wells and harvesting structures) and the formation of water users associations at each water point. The habituated formation of water users associations is establishment of a 7 member-committee, with clear bylaws and responsibilities. This committee will have two classes, the water management committee of 5 members (2 females and 3 males), and water care takers organized with two persons (one male and 1 female). The committee members shall be trained.

2.4.3 Output 3: Livelihood diversification activities supported

Under this output different activities including the promotion of crop production through, the enhancement of communities to engage in different income generating activities have been supported. The accomplished activities include the promotion of irrigation, trainings on entrepreneurship and marketing and group formation, as discussed below.

Small Scale Irrigation Schemes Developed

As in many areas in the world and specifically in Ethiopia - Afar Region, pastoralists are experiencing increased rainfall variability and an increase in average temperatures. Rainfall periodically declines, which means there is less water in rivers and it will take longer to recharge groundwater aquifers. The total precipitation has dramatically decreased, and most of the time it all fall within a shorter period of time and annual dry spells are longer, higher temperatures increase the amount of water plants require for growth demanding to store more water. This is a response to increased climate variability due to CC.

Water storage and proper use are tested options for adaptation investments in agricultural water storage, and management can significantly lessen people's vulnerability to climate change by reducing water related risks and creating buffers against unforeseen changes in rainfall and water availability.

In Afar, few small scale irrigation schemes are supporting the livelihoods of agro-pastoralists. The higher costs needed for the construction of the schemes, the collapse of constructed schemes owning to higher floods, the low capacity to promote these techniques, low availability of accessible rivers and the harsher weather condition have affected the introduction of irrigation structures in the areas.

Appropriate management and maintenance of existing irrigation systems is critical for long-term sustainability. It is also important to manage demand of water resources, rather than managing the supply alone. Effectively managing and maximizing the productivity of existing water resources is critical in dry areas where water harvesting and supplemental irrigation can be useful. It is also important to keep in mind that often optimum crop production can be achieved by spreading supplemental irrigation over larger tracts of land.

The AIDLM project had set a plan to support crop production through the proper use of existing rivers upon the implementation of maintenance works to existing irrigation structures and the construction of new irrigation schemes, at two of the target districts. The construction of one new irrigation structures and maintenance of another scheme, was expected to serve the development of 60 ha of land for crop production.

The detailed studies/assessments (on 2 rivers in Awra and Chifra districts) have been completed and the preparation of the construction works is under progress. The tasks under this activity result (small scale irrigation) have been delayed due to various reasons. Among the many, the dramatic change and sharp increase with frequent variation in the price of construction materials coupled with the poor estimate in budget allocation has been mentioned as main reasons. These have challenged working on the irrigation schemes. The delay in budget release was also mentioned as the second reason. Though very recently, the regional bureaus, with all of the essence support from UNDP have agreed to work on the implementation of the irrigation schemes, in the face of budget deficits. The budget set in the AIDLMP was supposed to support some portion of the schemes construction and the deficit to be covered by the regional water bureau.

At the time this report was in preparation, an agreement was reached between the regional WRB and EPLUA, to pace quickly to implement maintenance of one irrigation scheme and the construction of another new irrigation structure within the remaining project period. The training of 50 family heads including 15 females and the procurement of improved, disease free & drought resistant varieties of crops is at a progress by the regional water bureau and the regional EPLUA.

This commitment is a good start, but might demand some time after the end of the project life. The construction time will have some procedures and might take some time. Though the target beneficiaries are organized in cooperatives, they have to be practically trained until they enjoy at least one season harvest. Therefore, the author feels that some additional time (beyond the project life) shall be allotted so that the hot-roaming activities could be completed at the standard qualities and could ensure sustainable use of the structures.

Alternative income sources

As part of livelihood diversification the project had supported community awareness trainings on micro financing techniques. The trainings were delivered by district project coordination unit in collaboration

with district cooperative promotion offices, where 275 community members (50 % are females) were attendants.

Basic skill training was given on different techniques including handicrafts, where 10 community members (7 males and 3 females) attended. Following the need assessment and strategy development in collaboration with Afar Micro and Small Enterprises Coordination Agency on the identification of the type of marketable skill, training was organized at Lucy technical vocational and education training (TVET) College in Worer. The training components were carpentry, plumbing, masonry, electric installation, wood and metal work. The attendants were 90 youths and women. Though need assessment have not been conducted and no materials given to the groups, the trainees are organized in cooperatives.

The formation of 5 saving and credit associations in the 5 target Districts was conducted. The management members of the saving and loan groups are trained. The groups were also provided with technical assistances, material supports (such as the support in making the group have official stamp, documentation materials). Financial support in the form of seed money is on process to provide to the saving and credit associations on the basis of revolving fund and credit to be availed to the people engaged in micro-business including improvement of value chain in milk product. At the same time, business skill training including value chain development for milk products have been given to 30 beneficiaries.

2.4.4 Output 4: IDLM communication and information dissemination

Information boards provided

As the impact of climate change is multi dimensional, the AIDLM Project mainly focuses on addressing the problems through implementing integrated activities by involving different concerned stakeholders and with full and active participation of the community. But the awareness of the community about AIDLMP was at low level. Therefore, to increase the awareness level of the community and for information dissemination purpose 5 information boards have been procured and distributed to the 5 project districts.

Assessment of existing regional early warning system

The early warning system that exists in the region is weak, not capable of giving warning prior to the occurrence of disaster and hence hazards that could occur in the region, before it poses severe damage over the pastoralists. The assessment of challenges and constraints of the existing early warning system was conducted. This had come up with the need to organize training to the respective bureaus/offices. Accordingly, training was delivered to district and regional EW committee members, and believed to ease capacity for timely warning and to have full preparedness prior to occurrence of disaster, to minimize the impact that could likely happen.

Information Education and Communication (IEC) materials production and media coverage

The production of IEC materials was supposed to help program implementation in a sustainable way. The plan was production of documents in gender disaggregated manner and to be staged in radio and television programs, each for 5 programs. The program has developed a memorandum of understanding (MoU) and an agreement signed between Afar EPLUA and the Regional Government Communication Affairs Office for easing these activities. Selected experiences and good practices implemented by the project activity are prepared for the purpose.

2.5 Project Effectiveness

The program has accomplished many of the outputs set in the program document. The accomplishments in the watershed management specifically the soil and water conservation activities, the provision and installation of solar panels, the establishment of fodder banks, the capacity building elements of the program, the provision of program implementation equipments and materials and other can be mentioned as success of the project. Given the nature of the community in the implementation sites, the much delayed start up of the project, and other challenges, the effectiveness of the program can be rated as top-drawer.

On the other hand the delays in start up of the program and budget transfer have hindered the implementation of some activities such as the small scale irrigation schemes construction and activities related to these schemes, and the establishment and construction of market places. This has been severed by poor budget planning where poor estimates for the irrigation schemes and market centers construction were of significant. The AIDLMP was supposed to start on 2009, but the actual program has officially started on 2010. The first budget tranche was transferred in September 2011. This slow start up has highly affected the performance. At the regional level the program leader was initially mandated to the regional PARDB, but later the newly established Afar EPLUA took over the lead. This undecided initial ownership of the project implementation process hindered the actual implementation. The program has been redesigned for three times, which created cancellation and new addition of activities. Price increase for materials in some activities due to the price fluctuation at the current market had further slowed implementation.

Unless some time is given, the implementation of these activities will not only be under accomplished but will also highly affect the entire program performance.

2.6 Sustainability

There are indications that major program elements will have a sustainable impact. The policy support provided by the project can play a constructive role in mainstreaming climate change adaptation and mitigation options into the development plans, key sector policies and strategies. The best-fit program activities in addressing the core problems of the target beneficiaries' has convinced and motivated the beneficiaries to participate actively in the program execution and has engaged people in self-development efforts, which create ownership.

2.7 Lessons Learned

The project has successfully accomplished and was working harder on activities on watershed (natural resources) management, rangeland management, livestock production, small scale irrigation, marketing, early warning information, potable water supply, and environmental management. Many of its accomplishments have the cognitive process of acquiring skill and knowledge and needs to be scaled up and replicated.

The lessons learnt include:

I. Inter and intra project sites experience sharing visits, including community members/ pastoralists and agro-pastoralist, have taught the community in many aspects.
II. The promotion of watershed management activities specifically the physical Soil and Water Conservation activities, were first-ever-began with the support of the AIDLMP. This is not an ordinary achievement. The continuation of such activities with the same fashions will bring substantial contribution to ease the pastoralists cope with climate change and boost the adaptation capacity to climate change and drought related shocks. The increase in the community resilience to disasters and shocks will further strengthen the community and get self sustained. The strategies exercised in mobilizing the pastoralists in the watershed management activities, the techniques promoted and related activities were lessons.
III. The gully rehabilitation activities through mobilization of the community and supply of gully reclamation construction activities such as gabion were suitable to the areas and were lessons. The gully rehabilitation activities constructed by free stone-checkdams and gabion reinforced-stone checkdams have shown astonishing success. This activity has taught the community and the region at all, that the commitment and the devotions needed and the results thereon were demand driven.
IV. Though still at demonstration stage, the construction of houses with mud brick as construction material will have substantial contribution to the environment and the entire beneficiaries in improving their livelihood. The trainings given have helped to attract the attention of the trainees and other people around. Further promotion of these techniques could be a success in such aspects. It is learnt that the regional settlement program will have many activities which demand such techniques.
V. Introduction and promotion of alternative energy sources such as solar electric sources will help the bringing about of climate resilient economic growth. The provision of the solar panels for health institutes in the AIDLMP sites, has taught the importance of the scaling up of alternative energy from different sources.
VI. The traditional rangeland management technique (enclosing a specified grazing area and shifting grazing), revitalized by the project, have shown good results. This has taught the need on working on indigenous dryland management and conservation techniques.
VII. The project sites were selected based on criterion set by the regional officials and experts. Setting selection criteria helps to address needy areas. This has taught that selection based on criteria set based on needs is a lesson and but shall confine in a way that will be manageable.
VIII. The Project was supposed and agreed to start in 2009, but was delayed for a year, even the actual launch after two years (practically started in 2011), where the first budget was released to the regional state in September 2011. The time elapse to delegate responsible organs at the regional level was the reason behind. This has severely lagged the project performance. In November 2012, the performance was exceptionally good, but many unfinished activities might still cost the project performance. Briefly, the late start of the program and the lengthy budget transfer system has delayed and in other cases caused to cancellation of activities.

Chapter 3: THE BEST PRACTICES OF THE PROJECT

3.1 General

UNDP highly promotes and supports knowledge transfers within and outside target areas. For this purpose best practices from successful projects were supposed to be identified, documented and shared. The selections of the best practices are based on pre-defined criterion and have relevance for the intended purposes. The performance of the AIDLMP was proved that the activities were implemented to the anticipated quality and have met objectives set. Though some activities were at the start or demonstration stages, their contribution is hoped to be significant and put in here as best-as far as they meet the criterion.

3.2 What Make the Practices Best?

The UNDP uses data in an approach where data, research and analysis are matched with the best approaches and seeks that practices be applicable and replicable with minimum investment. The technologies need be clear, affordable and replicable. UNDP has developed basic criteria/guiding principles that can be used when identifying best practices. The best practices within the AIDLM Project were evaluated and selected based on these idioms.

The AIDLM project activities were best because:

The activities/practices were methodologically new and/or at least modified to suit local needs. This has helped the implementers to move in the best and successful direction during the course of the implementation of the project activities. As example, the project driven woreda level steering committee was stronger than ever had. Sector offices were fully committed of accomplishments. This has a methodological implication to inducing policy changes.

The activities were drawn from the ultimate needs of the community identified on the local climate change adaptation plan of action, and the implementation modality has helped to act on the demanding areas of the community. The communities were also part of project design and implementation. These have created ownership and hoped to last longer. Therefore, the issue of sustainability on many activities would not be a further concern. The activities, such as the construction of soil and water conservation activities were the first ever in the localities. The revitalization of the rangeland management techniques and the establishment of fodder banks have boomed the communities' commitment. The introductions of alternative energy techniques and other environmental management techniques have also helped many to look for better future. These accomplishments and the modalities of the implementation have benefited the community and taught many insiders and outsiders to think of similar activities.

The activities were not sophisticated and complex demanding higher level knowledge and skill. The modalities were easy to be exercised by local experts and the local community. Therefore, all activities along with their implementation modalities could be replicated to

anywhere else. The project activities were in many cases designed to address the problems of many beneficiaries. The watershed management activities, rangeland improvement activities, the small scale irrigation and related supports, the establishment of market centers, and the support in electrification of health institutions were designed to serve many more households.

The project has built the adaptive capacity of the community, especially the poorest of the poor, women and girls, which was proved through discussions with different sectors of these groups. This has helped these sects to enjoy their rights, and helped to cope with climate change impacts. During the design and implementation of the program, all community members including women and girls were participated. This has helped to address the needy sectors of the community, and created dialogue among the project kebeles and sector government offices. The participation of the government bodies at woreda, regional state and national levels was of significant and had created dialogue. The project practices had paid special attention to women and the poor, with appropriate and sound community participation and organization, information sharing, dissemination and awareness building adapted to the specific situation of the beneficiaries.

The project information including the proposal document, presentations, progress reports, and pictures at different stages of the project implementation were documented properly, for further uses. The current best practices document is also part of the same purpose. Therefore, all aspects of the project activities are documented and are ready for dissemination.

Community attests

The performance at Derayitu Kebele of Awra was at the peak-mind of the team, while travelling to Dewe and Chifra Districts where the AIDLMP was under implementation. The outstanding physical soil and water conservation activities of the project at all sites were so impressive and lovely to have taken a look at it. The hillside terraces, halfmoons and trenches constructed at Kilintina Darasa Kebele of Dewe; Wo'ama and Chifra Kebeles of Chifra; Mille and Ewa woredas at different kebeles were so impressive. The case of Wo'ama Kebele is selected for the discussion, where the Kebele Chair person was the key informant, who accompanied the team during the visit.

Wo'ama kebele is situated at 25 kms south of Chifra district, where many activities of the AIDLMP were implemented. The SWC activities at Dierewoyu site of the Wo'ama Kebele were very well situated and very exceptional for those whose thoughts are charged with the information of "first-ever-activity for the locality". The Kebele chairman, who was leader of the visiting team along with the district level focal person and the field officer, was proud to talk about and show the physical structures. "*This is what we have done, and hoped to go ahead in the future. We are hoping these structures will bring positive capacities on the fight to relieve climate change induced livelihood challenges*". He was pointing to the perfectly constructed hillside terraces, stone faced and tie-ridged soil bunds, trenches and checkdams.

He is discussing his impressions, and the team members are listening. "*Experience sharing and community mobilization activities have helped the project implementation to start from best practices and come in better performance. The way the community were attracted into the project and the lessons working with needy communities are now paved. The communities, in the entire Wo'ama kebele, are well encouraged to take part in any development activity, if they are well consulted. And in this project we had full supports because of the elements of the project and its implementation modality. There have been other projects before, but none-of them have brought such an impressive success.*

We know our big problem is the degradation of the land and water resources, and restoring and reclaiming these resources would bring life back to normal and comfort. This catchment area is agreed to be protected from livestock and human interferences. We are looking for fencing or marking the catchment, and if that happen the catchment will be further strengthened through biological conservation activities. Trees will be planted at the upper sides of the bunds and trenches, where water will potentially be stored. This will further strengthen the catchment development efforts".

These evidences are proof that the project achievements are to the standard anticipated, and be replicable.

3.3 Which Practices are the Best?

The best practices of the Project, as identified from field visits, reports and interviews are sorted based on the criteria set on the UNDP's "Monitoring and Evaluation for Results guide". Many of the accomplishments were learning and needs to be scaled up to the locality and other areas. The lessons learnt and to be taken as best practices include experience sharing tours, SWC activities, introduction of solar panel for electrification, the introduction of mud-brick houses, establishment of fodder banks and rangeland improvement. These are discussed below in subsections.

3.3.1 Development of Local Climate Change Adaptation Plans

Pastoralist communities in dry areas are intimately aware of the values of drylands and their diverisity and a significant proportion of them rely on it for their livelihoods. Where people living in wet lands may be much less aware of the biodiversity, or may be aware of it without associating it directly with the drylands. Although there is an understanding that dryland peoples have deep knowledge of their environment and are best placed to conserve their biodiversity, it is evident that many pressures are weakening their capacity to do so. Demographic changes and governance failures are major obstacles to the transmission and application of indigenous knowledge and management strategies. To conserve drylands biodiversity, support must be given to adapt indigenous and local knowledge systems to changing political, economic and environmental (including climatic) conditions.

It is proved that traditional natural resource conservation practices play significant role in protecting and rehabilitating the natural resources bases of a locality and hence there was the need to revitalize and make use of it. The pastoral and agro-pastoral communities in Afar Region have distinctive culture and diverse coping and adaptive mechanisms to natural and human-made hazards through their longstanding customary capabilities cascading from generation to generation. To satisfy the basic necessities and the demand of livestock feed, people are forced to exploit the existing natural resource beyond its capacity, ignoring the important traditional natural resource conservation practice. As a result these useful traditional natural resource conservation practices are under treat, and in some places deteriorating.

On the other hand there is a critical importance in the amalgamation of traditional natural resources conservation measures with scientific natural resources management techniques, for implementation of activities in managing the natural resources. There is the need to identify and use beneficial traditional conservation practices in other areas through experience sharing within other programs in the region, and outside.

The program critically discussed and planned the assessment, identification, synthesis and documentation of such traditional/indigenous natural conservation practices, for easing the use of these indigenous skills. For the purpose, regional technical team comprised of higher experts (drawn from Semera University, Afar Pastoral and Agro Pastoral Research Institute, and Afar EPLUA), was established by the program and tasked. The team assesses secondary documents, published and unpublished sources, analyses the findings and produced a document of the indigenous practices. The team has produced a document entitled the "Traditional Natural Resource Conservation Practices of Afar Community". The major elements in the document were mainly focused on the natural resources base of the region, the trends of the natural resources, the current natural resources conservation/management practices, tracking back traditional practices which are under treat of extinction. Following the analysis the team has also collated the way forward, and recommendations, there on. Based on this activity all the target districts were mandated to produce local climate change adaptation plan of action, where all were successful.

The studies and plan documents have helped in identifying the traditional practices and indicated that the system is integral part of the pastoralist livelihoods strategy. The traditional practices and the plan of action documents are encompassed of a combination of carefully managed herd movements, rotational grazing, rangeland enclosure, herd structure and splitting, mobility conditions and pastures evaluation. It has also indicated that working on the entire system means working on the entire livelihood system of the community. The productions of such plans of actions have substantial contributions in the effort in fighting the natural resources degradation of the areas.

Development projects are now accessed with complete information, and these documents could use for activity identification. These plans of action were fully utilized in the AIDLM project planning, designing and implementation. The activities in the Project were taken from

the study documents, and it was possible to address the key problems of the community. To come up with success, development projects need to start on and further strengthen the traditional system, improve the climate change plans of actions, and support with modern systems and technologies, like done by the AIDLM Project.

3.3.2 Experience sharing tours – Learning from what works

The organization of peer exchange visits is a practical and effective tool to foster learning between communities. An important way to strengthen communities is to help them learn from areas where best practices are implemented. The best way to learn from others is to visit them and see with own eyes what has been done, and what works well & what went down. With this intent the AIDLMP has fully supported the organization of experience sharing tours of the Afar pastoralists, DAs, and Experts to a neighboring Worebabu district of the Amhara Region.

The communities in the AIDLM Project areas were able to learn the experiences of the Worebabu community, on the way they used to manage their watersheds – land and water resources. Following the study tours, the pastoralists were organized in groups and actively participated in the implementation of the project activities, (specifically on soil and water conservation activities). This has helped the community work on the soil and water conservation activities with full commitment, and came up with good quality structures. Though the construction of the activities were entirely new to the localities, the qualities of the structures were found perfect, with minor defects in some areas. Therefore, the staging of experience sharing visits shall be scaled up and continued on an intra and inter region, intra and inter country basis.

3.3.3 The Project management

The project was dealt out across four administrative levels (Federal, Regional State, District and Kebele), in line with government institutional set-up. As project management body two project steering committees (at regional state and district levels) were formed, and project management units were established at district and regional state levels. The 5 project offices with a strong back up from regional coordinators and UNDP country office were fully in charge of the overall implementation of the project.

The project was initially planned to run for three years starting in 2010 and ending in 2012, but has been delayed for almost one year. This has demanded an extraordinary commitment from the respective actors, where the project coordinators/focal persons and the UNDP-CO & Regional Office were required to exert exceptional efforts.

The district steering committee were meeting frequently to discuss the implementation of the project, visited the target kebeles, and conducted project implementation review meeting with UNDP-CO. Successive field visits were carried out by program coordinators and UNDP and occasional visits made by the regional state Bureau of Finance and Economic Development (BOFED) and district steering committees. The regional state and district steering committees were frequently re-activated and supported by the UNDP staff. The district steering was praised by many for its performance than other similar projects.

The success of the project was said to be because of the good performance of the focal persons and project officers, backed by the regional state coordination office and UNDP staff.

3.3.4 Soil and Water Conservation – Ease natural resources management

Land and ecosystem management practices, like slowing down run-off, building water storage/moisture retention structures, planting tree species that promote the growth of other plants, and diversified agro-forestry practices that help maintain vegetation cover can help lessen the harsher consequences of dry periods. Such practices can also minify the impacts of drought by sustaining and safeguarding the benefits that ecosystems provide. The AIDLM Project has supported the management of small watersheds at all the 5 districts. This was a first-ever activity for the pastoralists in the Afar Region. The knowledge they own were the declining traditional natural resources management practices - they brought through cascading from generation to generation, and the experience they got through experience sharing visits from Amhara Region. For the introduction of the soil and water conservation techniques, representative community members, who took part in the experience sharing visits and other trainings, were able to mobilize the entire community to take full participation and commitment on the construction of soil and water conservation activities and management there in.

All beneficiaries and the respective offices were encouraged through different capacity building activities, and were committed to discharge all they were able do at the required

standard, which resulted in the success of the management of the project. For this purpose soil and water technicians were formed and trained on surveying for laying the structures, and to lead the technical implementation of the conservation activities.

A new start for all the five target district community, the construction of soil and water conservation activities was seen as a perfect start. A multiple of physical soil conservation and water retention activities, gully rehabilitation activities and river training/river bank stabilization activities were successfully accomplished. The construction of the soil and water conservation activities were accomplished with a 50% community contribution, and was also proved that the communities were happy for they took part.

Some community leaders have proved that though such activities are the very first techniques they are now convinced of the importance/benefits in the fight against climate change induced life threatening situations. This has helped the project perform well and once degraded areas were covered with different structures and getting reclaimed.

These conservation structures, as hoped by the beneficiaries, development agents and focal persons, could be able to results in the increase in the discharge capacity of springs and rivers, the development of forage grasses from formerly degraded lands, the reduction in floods and increase in the moisture availability of grazing lands and related benefits. With these advantages the farmers were hoping to enjoy an increase in the productivity of grazing lands through the improvement of soil moisture conservation and reduced erosion. This will help them properly manage their animals with which the sales of livestock could be improved. The proper management of watershed through the adoption of different activities is also known to serve as mitigation mechanism for climate change.


SWC Activities in Ewa Woreda

The commitment the community and the local government took in achieving the already constructed activities and working on new activities is hoped will continue even after the close out of the program, with a minimal coordination support from the local government. Therefore, such strategies and commitments shall be carried over to upcoming times and the issue of ensuring quality of activities is a good performance of the program. The way the techniques were selected and the modality the community were mobilized can be cited as best performances of the program.

A number of community members have witnessed their satisfaction and testified the practices performance.

Abdukhalif, a vice chairman of the Derayitu kebele at Awra district, and the task carrier on the implementation of the AIDLMP activities within the kebele, was ambitious that such smart activities will boost the improvement in the lives of the community. According to Abdukhalif, the "Derk Mequaquam" means dryland management program has started impacting the lives of the local community and has got good acceptance, as against other such external-supported programs. He has informed the team that in the AIDLMP, the people were not hesitating to participate in the implementation of the activities. This is because of the nature and modality of the program.

As stated by Abdukhalif, the program was emanated from the root/core problems of the community through real community participation. "We will show you impressing accomplishments if you give us time to see what we have done so far. But we also promise to move forward if there is a continued support in such accomplishments" Abdukhalif was discussing in Afar language.

"Look the hill, where many physical soil and water conservation activities are constructed, and some areas are protected from erosion, downstream grass lands are protected from flood and depositional problems, which served the community as grazing lands" Mohamed (another person in the area) attracted the attention of visitors, pointing at a catchment where SWC activities were constructed. The project field staffs were also eager to have a visit to the area Mohamed and Abdukhalif were pointing. It was so lovely seeing such performances for a community of first ever-activity. "This is very good for a first-starting community and is encouraging"; one of the visitors was heard as saying. The author of this write up also admired that for a first ever activity, looking encouraged at such highness is amazing and hoped to come up a positive future.

3.3.5 Solar panel for electrification – Alternative energy source

The impeding nature of the conventional development path, which results in a sharp increase in Green House Gas (GHG) Emissions and unsustainable use of natural resources, has to be turned out and replaced by environmentally friendly sustainable development strategies, which could end in sustainable growth. This could be achieved through building green economy strategy, where Ethiopia is aggressively promoting. The AIDLMP, designed this way, was working with the promotion and provision of alternative energy source, specifically solar

panels promotion was successfully accomplished. Health institutes, which were suffering a lot due to absence of electricity, are now enjoying the multiple advantages of solar electrification. They are able to preserve vaccines so that they were able to accomplish vaccinations at required times, and as well are able to serve 24 hours medication.

Solar panel as alternative energy source

Impressed by the outcome of such support additional solar panels were requested and were under procurement for more health stations and rural schools. The rural schools thus equipped with solar panels, television and VCD/DVD were hoped to be able to have study center for school children and in promoting community dialogue, adult literacy etc. This technology can also be scaled up for the villagization program of the region. The Afar government is working on the settlement of the pastoralists. Such settlements are known in consuming huge amount of wood products, with which the forest resources would suffer a lot. Adopting such alternative energy sources has unreplaceable impacts in protecting the forest resources and in mitigating climate change and drought impacts.

Solar Electrification improves Service performance

Solar Panels, for rural electrification, have been installed at Bilu Kebele in Ewa District, Health Post. This way, 10 panels of 130 watt each was installed and was serving 1 deep refrigerator and 6 lamps of 60 watt each. This electrification was serving as healthy-stay for vaccines and other sensitive drugs, helps night time medications for emergency cases, staff were also using the refrigerator for maintain drinking water and food. This has significantly encourage staff to stay at the area for long resulting in giving treatments for the community, which otherwise would have suffered a lot including deaths and travelling longer distances for search of medications at Ewa town. The medication center at 16 kms round trip did discourage patients of sufferance of long distance travel for treatment, and in many cases cots lives.

This was also helping the Bilu Junior school teachers. About 10 teachers were sharing the benefits of cooling drinking water and food preservations which in a significant way encourages staff to stay at the area for long resulting in delivering sufficient teaching and advise students within the community.

3.3.6 Sound community participation – In the realm of pastorals

The involvement and empowerment of local communities in the design and implementation of dryland management activities was believed to be the major input contributing for project success in the community-based development approach, where UNDP supported to a significant extent. Improved community-based natural resources management was initially the major thrust of the AIDLMP, and moved toward broader goals of managing dryland, in recognition of the importance of local capacity building, and the need to respond to people's priorities.

The community at the project districts took part in the problem identification and project implementation, which now pushes pastoralists commitment to a level beyond expected. Following experience sharing and community mobilization activities the communities have shown extraordinary commitment and participation during the implementation of different elements of the project. The voices heard from some community members was so encouraging that from now on there will be no fear to work with pastorals, as far as they are taken as part of all aspects of the project implementation. The way the communities were attracted into the project and the lessons that working with needy communities will have good successes.

3.3.7 Mud-brick houses – A transformation in the housing sector

The traditional way of constructing dwellings widely contributes to the deforestation process in the country hence it is very important to introduce sustainable building materials suitable for low income groups. There are different techniques available that are suitable for construction of sustainable low-cost houses, where mud blocks, are selected in the AIDLMP. Since these alternative building materials potentially could contribute to a better standard of living for people and counteract the environmental problems there is reason to continue, broaden and deepen the knowledge about these possibilities.

Bricks made of mud, where everyone can produce at its vicinity, are good construction materials, with ecological, economical and social advantages as compared with the conventional wooden houses. The specific advantages include reduced deforestation, economically low cost – reducing material and construction cost by half (needs further cost estimates), durability (more than 60 years in some parts of Ethiopia), moderating temperature (reduces warming effects), and fireproof. Mud brick housing has also disadvantages (such as poor water resistance, brittleness, low tensile strength and poor resistance to abrasion), but the advantages very much surpass the disadvantages.

The construction of mud-bricks house is not new to other areas in Ethiopia, but the Afar community when first learnt, were surprised of the technology. The demonstration houses, by the IDLMP in Afar, will hopefully facilitate the implementation process of the unfamiliar building materials to the society by showing people the advantages they involve compared to the traditional way of building. At this point, a reminder could be the policy issue on thinking this technology to make it part of the regional settlement program, with lessons learnt from the AIDLM project.

Solid Mud brick house construction as heard from implementers

The project has provided training on brick production and availed mud-brick producing molds for all the five project areas and all of them are at demonstration stage, where trainees are requesting additional molds for the production of the bricks. The visionary trainer Mohamed, residing in Awra, was part of the project implementation. It was Mohamed, a government employee office Gardner, who first started use of solid mud-blocks to construct houses. In Awra district about 17 people (5 women and 12 men) were trained and Mohamed hopes 3 women and 11 men will be working on the actualization of the technology at the trainees' level. Adem, the district field officer has witnessed that some trainees are asking for the block mold to work on this technology.

Mohammed was interviewed and speaks. "I went through the technology from a video somewhere, and constructed my own house and proved how it works. Some people around asked me to do the same for their own, and to date I have constructed for one. I will be working on this as far as people are convinced of, and hoped to go ahead for replacement on the gardening job", Mohamed talked to visitors .

Ato Takele, Program Analyst at the UNDP, looked eager to see people constructing houses employing the mud block and enjoy the multiple advantages to make good use of this kind of technology. He asked Mohamed how efficient this will be for a comparison with similar sized wooden house. The trainer replied extremely cost effective, citing that at current prices one HCB/hollow concrete block of the same size costs 14 birr, but the current SMB/solid mud block costs only 5 birr per block. Then the author calculated the cost for a 4mx4m room, and come up to a conclusion that a household will enjoy a reduction in cost of approximately 6000 birr per house, which is extremely significant for a low income family.

Demonistration of mud-brick house - Chifra

Mohamed's (Awra) mud brick house

Many feel that though it was at a start/demonstration phase at the AIDLMP implementation, this technology should be scaled up. The Afar region is planning to have a regional settlement program, which in many areas is claimed as an environmentally degrading. The SMB housing will have multiple advantages in the promotion of the settlement program and shall be adopted into and work on it.

3.3.8 Fodder Banks – Drought contending mechanisms for pastoralists

In most small scale farming systems livestock graze in pastures or woodlands feeding on grass and herbaceous plants. During the sufficient wet season these lands provide adequate forage to maintain productive animals. In the dry season however, the quantity and quality of forage greatly decreases and is generally low in nutritional value. Livestock sustained on such poor diets often lose weight and productivity. To avoid these problems farmers must provide their animals with quality feeds to augment dry season forages. A more practical solution is to establish fodder banks, plantings of high-quality fodder species, to maintain healthy productive animals, for use during forage deficit times of the year. The fodder nbanks are designed to bridge the forage scarcity of annual dry seasons, as supplement to the available dry season forage.

The AIDLMP has supported the target districts to establish fodder banks. The main objectives were multiplication of different forages for distribution to the community members for use during forage deficit times of the year, and for distribution for those who were not able to search for animal feed at longer distance, because of age or other health related inability. The fodder banks were established near perennial rivers, which are serving the grasses grown to reach maturity, and to produce grass for 2 to 3 times a year. The forage banks were sown with *Alfalfa*, *Panicum* and *Rhodes* grass, entirely grown watered with irrigation as supplementary irrigation in rain deficit rainy seasons and as full irrigation for more production during the rest of the year.

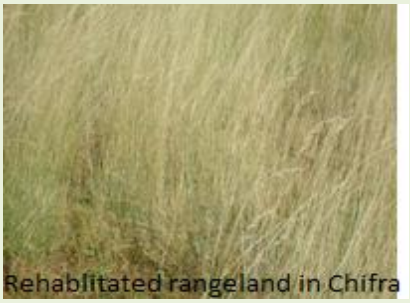
The fodder banks were delineated/fenced, and properly cultivated so that the productivity there on has been improved to a larger extent. The sites were provided with water pumps with sufficient water hoses, and furrow irrigation was exercised. As can be from the above photos, the management of the fodder banks was made through the farmers, who are trained of water lifting, application, land management and agronomic practices of the forage. These people have also got the experience in managing other plants like crops.

Some of the fodder banks have already served at least for one season and were under reinstatement for another season, but few others were under establishment. This activity is an excellent choice and good performance, where it could be taken as best practice.

Medina, one of the employees working on the fodder bank, at the Wo'ama kebele, was smiley and looks energetic. She was telling the team that she is praying for God to keep well such efforts. Medina is speaking"These grasses are grown at our land and for use for us. Those people who were not able to feed their animals, at times when there is no grazing, are entitled and will feed them for free. We know some agro-pastoralists grew crops from irrigation, but now we are also learning that we can produce forage through irrigation. This is a very good strategy, and we will exercise even in other areas. What we need is not the technique, but the materials we could not own".

3.3.9 Rangeland improvement – As mitigation mechanism

Climatic fluctuations are defining characteristic of dryland areas, as rainfall varies substantially between and within years, affecting the lands and pastoral livelihoods. Predicted changes in rainfall patterns result in increasingly scarce, scattered and unpredictable pastures. As a result, access to pastures become more difficult, leading to loss of livestock and of livelihoods.


Rehablitated rangeland in Chifra

The AIDLM program has identified possible solutions in the rangeland management and development of the pastoral areas

in the target districts. This activity was drawn from the practices that the project was revitalizing as traditional knowledge. The project was able to manage the closing of grazing areas to prevent roaming animals on rangelands, and the grasses are supposed to be feed to animals on a cut and carry system or with a controlled grazing technique, whichever is suitable for the pastoralists. These activities have shown better rangeland performance and can be cited as good practices.

Farmers have witnessed the performance of such achievements.

"Look" Abdukhalif a farmer in Awra district, "look how the closed area appears against the free grazing land. There is much difference, where the local laws developed by the participation of the local community are working in the protection of the closed areas. We sat together; discussed on what we shall do, on what parts we should participate, on what we do in the management of the closed areas. Then we took part in the fencing of the closed areas, developed bylaws on how to protect and elect guardians to guard against those violating herders. No one will violate the laws and will not grieve if punished for violating the laws since the articles in the law are informed of the whole community, and are agreed to bind them. Therefore, we hope will bring changes in the communities' lives." Abdurafi concluded.

A herder who was keeping his stock was also active to testify. Here is his witness.

Mohamed Seid, a father of 8 and a head of 2 families, was herding his goat stock near a closed rangeland. "What are you doing here?" was the question first raised by the visiting team. "I am keeping my stock having grazed on the permitted lands protecting the closed area" short answer. What do you observe here in the range area and around? The second question, "hopefully drought relieving closed area and an open grazing area currently open for grazing" he added. Who supported you in doing this closure? Gazing at the UNDP field staff, "here are our colleagues who have worked hard in advising the community to do so. They were here with us for longer, and has advised and initiated to take part in many aspects of land development. Our women and the men respected the advices and took part in the delineation of areas for closure, actively participated in the construction of bunds and check dams on potentially eroded areas and gullies" Mohamed added.

3.3.10 Water supply and sanitation improvement

Among the different impacts of climate change, drinking water shortage is the series problem in all kebeles of the project districts. The project had planned the construction of 20 hand dug water wells to be fitted with hand pumps. The main aims of constructing the shallow wells were:

7. To reduce water fetching related risks, specially women will be relieved from hardships of walking long distances & risks,
8. to reduce the water fetching time, and women will get enough time to work on other businesses in supporting their family,

9. To improve the health of the households family members, easing the production capacity of the families. Currently the target communities were forced to drink unprotected river water sources which had been compromising their health and lead to low production capacity.
10. To help children/students attend schools owing to the improvement in their health.
11. Reduce conflicts due to water use


Water well serving the community

Accordingly, 20 hand pumps were procured and distributed to the project districts. The construction of the shallow/hand dug wells is under progress in all districts with some secured the required water yields. Others were still digging the wells, and upon securing sufficient water, the wells were to be fitted with the hand pumps. In Chifra District the maintenance of Wo'ama borehole water well (initially constructed by the regional water bureau) was completed and the communities were enjoying clean and safe water.

3.3.11 Small scale irrigation

As in many areas in the world and specifically in Ethiopia - Afar Region, pastoralists are experiencing increased rainfall variability and an increase in average temperatures. Rainfall periodically declines, which means there is less water in rivers and it will take longer to recharge groundwater aquifers. The total precipitation has dramatically decreased, and most of the time it all fall within a shorter period of time and annual dry spells are longer, higher temperatures increase the amount of water plants require for growth demanding to store more water. This is a response to the increased climate variability.

Water storage and proper use are tested options for adaptation investments in agricultural water storage, and management can significantly lessen people's vulnerability to climate change by reducing water related risks and creating buffers against unforeseen changes in rainfall and water availability.

In Afar, few small scale irrigation schemes are supporting the livelihoods of agro-pastoralists. The higher costs needed for the construction of the schemes, the collapse of constructed schemes owning to higher floods, the low capacity to promote these techniques, low availability of accessible rivers and the harsher weather condition have affected the introduction of irrigation structures in the areas.

Appropriate management and maintenance of existing irrigation systems is critical for long-term sustainability. It is also important to manage demand of water resources, rather than managing the supply alone. Effectively managing and maximizing the productivity of existing water resources is critical in dry areas where water harvesting and supplemental irrigation can be useful. It is also important to keep in mind that often optimum crop production can be achieved by spreading supplemental irrigation over larger tracts of land.

The AIDLM project had set a plan to support crop production through the proper use of existing rivers upon the implementation of maintenance works to existing irrigation structures and the construction of new irrigation schemes, at two of the target districts. The construction of one new irrigation structures and maintenance of another scheme was expected to serve the development of 60 ha of land for crop production.

The detailed studies/assessments (on 2 rivers in Awra and Chifra districts) have been completed and the preparation of the construction works is under progress. Agreement was reached between the regional WRB and EPLUA, to pace quickly to implement maintenance of one irrigation scheme and the construction of another new irrigation structure within the remaining project period. The training of 50 family heads including 15 females and the procurement of improved, disease free & drought resistant varieties of crops is at a progress by the regional water bureau and the regional EPLUA.

This commitment is a good start, but might demand some time after the end of the project life. The construction time will have some procedures and might take some time. Though the target beneficiaries are organized in cooperatives, they have to be practically trained until they enjoy at least one season harvest. Therefore, the author feels that some additional time (beyond the project life) shall be allotted so that the hot-roaming activities could be completed at the standard qualities and could ensure sustainable use of the structures.

Chapter 4: KEY MESSAGES/RECOMMENDATIONS

The recommendations that can be made for easing the program or a similar are detailed here under.

4.1 The Need for Improving the Early Warning Systems

Enhanced use of early warning information in drought areas is a system that helps the provision of timely and effective information that allows individuals take action to avoid or reduce risk and prepare for effective response." It is a must-integration of four main elements: risk knowledge, monitoring and predicting, information dissemination and response, by which failure of any part of the system will imply failure of the whole system. Early warning systems can prepare governments and donors to respond to situations before they turn into emergencies and farmers to get prepared for upcoming incidents (positive or negative). The AIDLM project, a kind that supports the dryland and pastoralists lives shall escalate the use of EWS as major activity, and work on improving the entire systems through developing a link among the different level.

4.2 Gender Analysis

Gender analysis is becoming a key issue in development programs. The AIDLMP has set the activity plan in a gender disaggregated manner. The monitoring of project activities has proved that the participation of males and females was found at a variable figure. Women actively participated in the soil and water conservation activities, outweighing male participation, and are also highly burdened at household activities. But their participation in trainings and some gender-flick activities is reported much lower than planned. Though these figures are not discouraging owing to the cultural imposition, the attention given appears, to be not focused. Therefore, the importance of gender analysis and the mainstreaming of gender issues would be crucial.

4.3 Environmental Assessment

Naturally the project is ecologically well suited. But some activities, such as hand dug well construction, small scale irrigation, river training, market center construction, will have negative environmental impacts, if implemented without due care. In addition, some activities are attention grabbing in their nature, where environmental impacts are significant. Therefore, it is felt that these issues would have been addressed before the implementation of the program activities began. This would include the preparation of programmatic environmental assessment and development of environmental mitigation and monitoring plans for effective monitoring during the implementation of activities feared to have impacts.

4.4 Program Exit Strategy

The program was intensely focused on the implementation and process activities, and there is no discussion of exit strategies to ensure the sustainability of the program activities. The communities have only recently started these activities and follow-up and monitoring will be crucial in helping them to gain confidence in handling these new businesses and activities successfully. Though the sustainability issue was at risk-free stage, there is the need to develop an exit strategy, which will include building the capacity of project implementers and the completion of unfinished activities such as the small scale irrigation, mud-brick house construction, shallow water well construction and market center establishment. The construction of these activities would demand some more time than the current project life, but more importantly the issue of managing these accomplishments would either boost or deny the sustainability of the project. These activities are importantly critical in upgrading the success of the entire project, and ensuring sustainability, but could only be possible through working for some more time.

4.5 The need for maintenance of SWC activities

The already constructed physical SWC structures are excellent, demanding minor maintenance. Due to the nature of the structures, unexpected torrential rainfall and animal roaming effects, these structures would get broken sometime in the year. This requires that the structures are periodically inspected and maintained if collapses faced. The other issue is the quality of the structures. Some SWC structures are weakly managed, and a failure might not be surprising. Such quality mistakes shall be avoided, through capacity building.

4.6 The need for a "No-cost extension" time

In all the project areas, some activities are at the start stage. Some to mention include the small scale irrigation, market center establishment and construction, water supply. These activities are critically important for the beneficiaries, and needs to be completed, if otherwise would mean unnecessary start & waste of the resources for the donor and the IPs, and a great loss for the beneficiaries. Therefore, these activities should get some more time, which would be determined upon further assessment, and take time to see on the results. All IPs and the beneficiaries are so keen that they all unanimously desired to get some time to make out these unfinished activities. Therefore, the unfinished activities of the AIDLMP shall be managed through either with no-cost extension period or demand another critical solution, which otherwise will shadow the overall accomplishments of the project.

REFERENCES

AIDLMP, 2010 – 2012. Different training documents (Soil and water conservation techniques; Integrated vector management; Community mobilization; Basic skill training; etc). Afar – Semera (unpublished and not compiled as one).

AIDLMP, 2010 – 2012. Different Basic Project Documents (Project Agreement Document, Redesigned AWP docs, Progress reports, Presentation, etc). Afar – Semera (unpublished documents).

ANRS, 2010. Program of Plan on Adaptation to Climate Change: Afar National Regional State (ANRS) with support from FDRE EPA, Afar Semera (unpublished document).

Assefa Biru, et al, 2011. Traditional Natural Resource Conservation Practices of Afar Community. Afar EPLUA, IDLM Project, Semera (unpublished Assessment Report)

Eynden V., Corti L., Woollard M., Bishop L., and Horton L., 2011. Managing and Sharing Data . Best Practice for Researchers. UK Data Archive, University of Essex, Wivenhoe Park, Colchester, Essex, CO_4 3SQ

Liniger, H.P., R. Mekdaschi Studer, C. Hauert and M. Gurtner. 2011. Sustainable Land Management in Practice – Guidelines and Best Practices for Sub-Saharan Africa. TerrAfrica, World Overview of Conservation Approaches and Technologies (WOCAT) and Food and Agriculture Organization of the United Nations (FAO)

FAO (No Date). Gender and Dryland Management: Gender Roles in Transformation: Gender and Population Division Sustainable Development Department; Food and Agriculture Organization of the United Nations. www.fao.org/sd or www.fao.org/gender (online on November 2012).

IIED, 2008. Climate Change & Drylands. International Institute for Environmental Development. Commission on Climate Change and Development. www.ccdcommission.org (Online on November 2012).

Johansson, A., Wartanian R., 2008. Sustainable Low-Cost Housing for the Kambaata Region, Ethiopia - A demonstration project for dwelling-houses. Construction Engineering Program.

Ragnar Ø., Trond V., & Jens A. 1999. Good Practices in Drylands Management. The International Bank for Reconstruction and Development/ The World Bank, 1818 H-Street, NW, Washington DC, 20433, U.S.A.

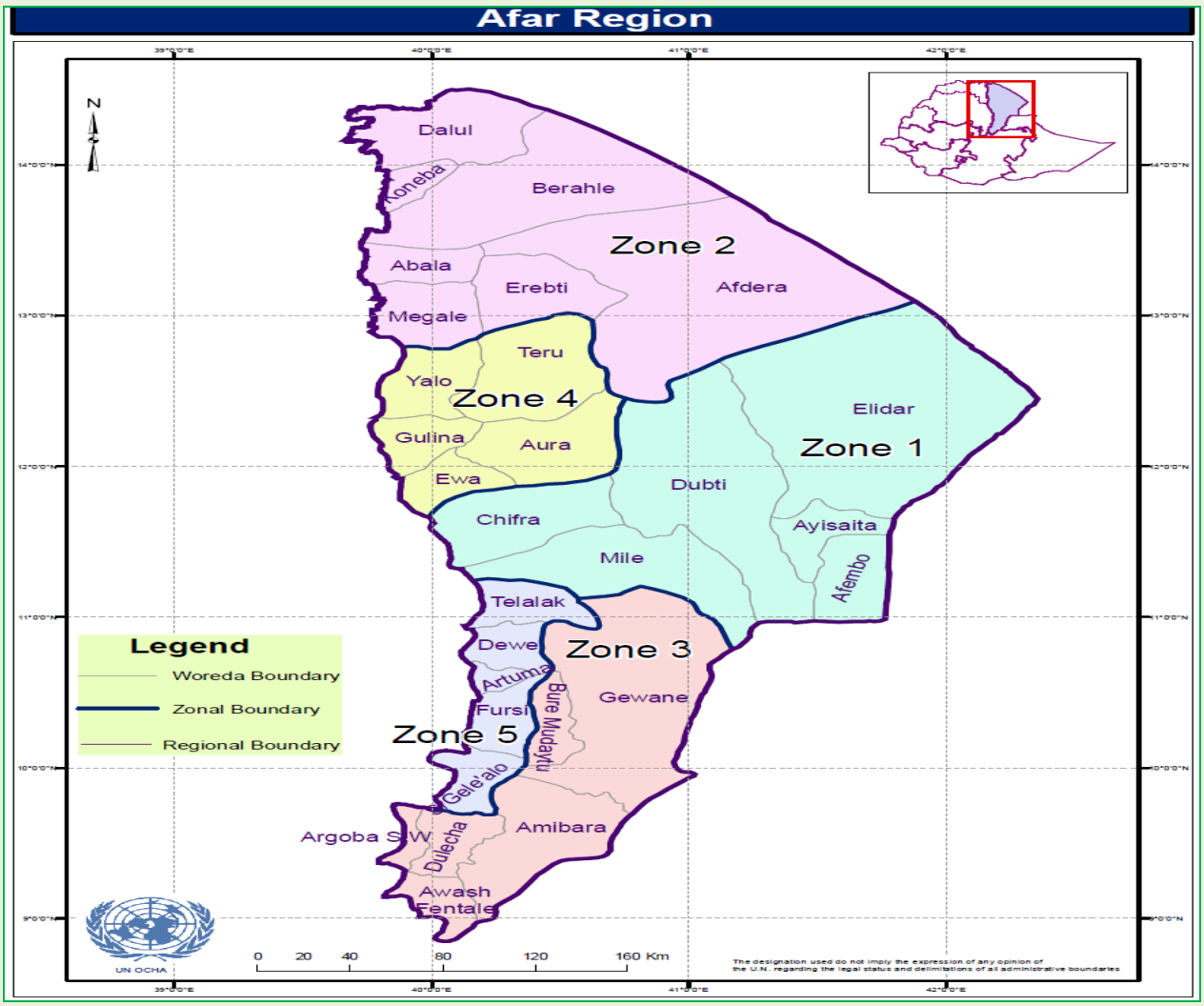
Roshetko J., 1994. Agroforestry for the Pacific Technologies: A publication of the Agroforestry Information Service Nitrogen Fixing Tree Association. Paia, Hawaii, USA.

WHO, 2008. Guide for Documenting and Sharing "Best Practices" in Health Programmes, World Health Organization, Regional Office for Africa, Brazzaville

Zerhusen D., 2012. Mid-Term Evaluation of the MDGF-1679/ Ethiopia: Enabling Pastoral Communities to Adapt to Climate Change and Restoring Rangeland Environment (01/10/2009 – 21/10/2012). A joint Program of UNDP, UNEP and FAO. (Unpublished evaluation report)

ANNEXES

1. **Annex 1: Location Map of the Afar Region**
2. **Annex 2: Individuals Consulted**
3. **Annex 3: Accomplishments of the project (separate document)**



Source: Semera University Greenification Project Proposal, 2012

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