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Institutional innovations in African smallholder carbon projects

Case Study: Humbo Ethiopia Assisted Natural Regeneration Project

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Project's capacity to produce verifiable credits

SLM interventions implemented

The Humbo Ethiopia Assisted Natural Regeneration project involves the restoration of a natural forest using indigenous tree species in a mountainous Humbo District of South Western Ethiopia. The project aims at rehabilitating 2,728 ha of a formerly forested area that had been degraded due to human activities mainly tree cutting, charcoal production and livestock grazing.

The project interventions include: protecting areas that still have live stumps and remnant trees to foster natural regeneration; planting of both indigenous and naturalized tree species in open areas where there are poor stumps and soil seed banks, on individual homestead lands outside the project site to reduce pressure on forests; and implementing forest management practices such as thinning, pruning, coppice reduction, livestock management, fire management and development and implementation of a community forest resources access mechanism.

Specific project activities are:

- Community management of public land with multiple objectives of promoting natural resource management, poverty alleviation and biodiversity enhancement
- Development of a model of community land use that would enhance greenhouse gas (GHG) removal from regenerating native vegetation, which can be replicated in other regions of Ethiopia.
- Formation of seven community cooperative societies, securing legal title to manage the proposed regeneration area, and adopting a constitution and by-laws to manage the project.
- Establishment of institutional structure for users to manage the project while also having rights to the land and products from the land.
- Establishment of a system to monitor the carbon stocks, report on the changes in carbon stocks and help the small-holder agricultural community access carbon revenue to improve their livelihoods.
- Establishment of a system financial system to manage investments in the community
- Establishment of a system to monitor the environmental and social issues relevant to the project.
- Connection of the financial system with the auditing system and reporting on finances to the general assembly
- Reduction of flooding and soil erosion affecting the downstream farmers and improving the productivity of their land through the restoration of degraded forests

The project is expected to sequester 880,296 tonnes of Carbon dioxide equivalent (tCO₂e) for an operating lifetime of 60 years and a fixed 30 year crediting period with an average net anthropogenic greenhouse gas removals by sinks of 29,343.2 tCO₂e per year. This figure Note that the amount of carbon sequestered will likely vary significantly depending on the year. A validation exercise was undertaken for Climate, Community and Biodiversity Alliance (CCBA) standards and has been rated Gold standard which gives confidence to carbon buyers that the project will deliver GHG reductions as well as both community and biodiversity benefits.

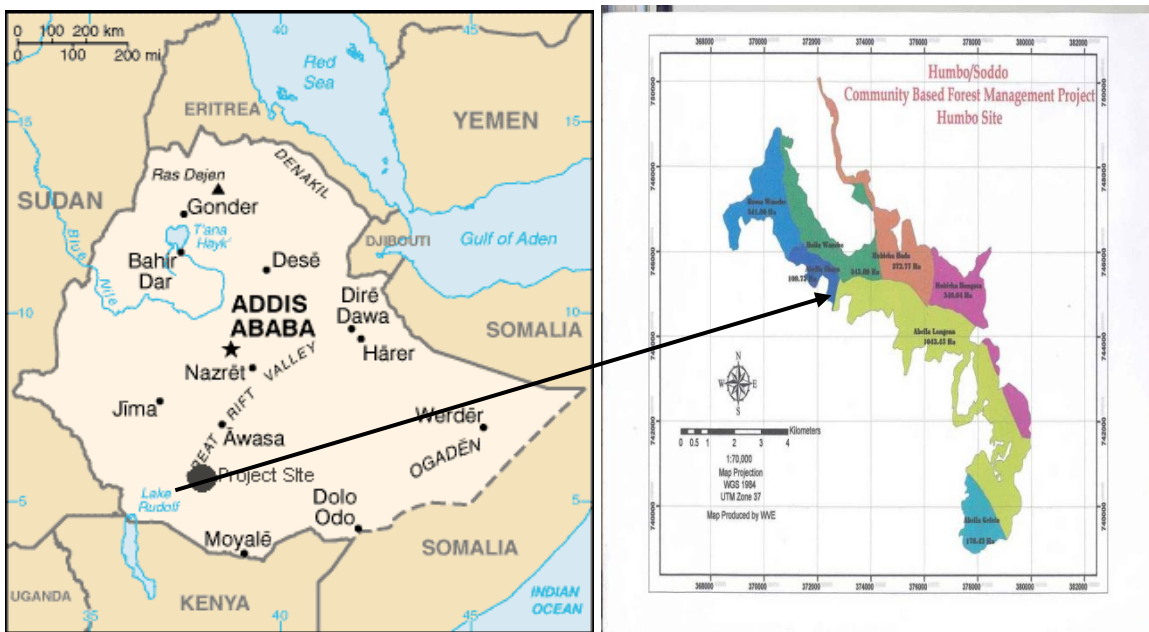


Figure 1. Humbo Mountains from the Abala Longina Cooperative Office. Photo by Michael Misiko February 201.1

Project targets

The project is located in the Humbo District (Woreda), Wolayita zone, Southern Nations Nationalities and Peoples Region (SNNPR), South Western Ethiopia (see Figure 2).

Figure 2. Map of Project Area (Source: Humbo Project PDD).



The project area falls in seven Kebele Administrations (KAs) which are the smallest administrative units. Each KAs organized into Forest Protection and Development Cooperative controls and manages a designated area within the mountainous forest; whose internal boundaries were established according to the extent of each KA and were agreed upon right at the start of the project.

Progress towards targets

The project preparations began in late 2004, and field operations began in 2006. The area was closed to both human and animal intruders in 2006. Four tree nurseries were also established in 2006, and two temporary and two permanent and planting of open areas commenced in 2007. An Emissions Reduction Purchase Agreement (ERPA) was signed in 2009. At the time the researchers visited Humbo for data collection (February 2011) the cooperatives were finalizing all project requirements, including sustainability plans, that allow them to receive their share directly to the account of each cooperative from the revenue already transferred to WVE.

Actors for the implementation of carbon-friendly SLM practices

A number of actors are involved in the design and implementation of the project. Each of the actors has played and continues to play specific roles and responsibilities based on their competencies and/or their mandate. These actors complement each other, bringing unique skills and resources to the project. This team work has enabled the project to progress very fast and obtain all the necessary approvals to being upgraded to gold standard by the CCB carbon standards.

Project Developer: World Vision Ethiopia and World Vision Australia

World Vision Ethiopia (WVE), in collaboration with World Vision Australia (WVAU), is the primary initiator (proponent) of the assisted regeneration carbon project and has played the prominent role in the formulation of the project, organizing the communities concerned and in soliciting as well as mobilizing funds for the project. World Vision (WV) is committed to continue supporting the project by giving technical and human power support and by facilitating the management and flow of funds to the community. The project management cost to date has been covered by WVAU and will be covered through 2012. The ERPA has been signed by WVE and WVAU on behalf of the communities with the trustee. WV also signed sub-ERPA with the forest development and protection cooperatives and concerned district level rural development office based on the main ERPA. WVE is receiving carbon payments through WVAU on behalf of the community and disbursing the funds to respective cooperatives proportionately upon the amount of emissions they have reduced. This responsibility also entails that WVE has an active role in monitoring the project to ensure that the terms and conditions incorporated in the ERPA are adhered to during the implementation of the project and that the trustee receives reports. WVE's responsibilities include:

- Ensuring that the project obtains all the necessary approvals by government and other players in the carbon business
- Providing a link with carbon buyers, providing linking and mediation services

- Entering into an Emissions Reduction Purchase Agreement with the carbon buyer on behalf of the cooperative societies
- Conducting training to members of the cooperative societies to ensure they are technically competent to implement forest management interventions as well as managing affairs of the cooperative society
- Facilitating the formation of a Cooperative Union that would eventually take on the project leadership responsibilities beyond September 2012
- Serving as an external member of the Board of Directors and participating in the general assembly as non-voting member
- Rendering technical, professional and advisory assistance to the society since the inception and will continue providing advisory role after 2012.
- Jointly monitoring the reforestation carbon project with members of the executive committee
- Acting as a liaison with the relevant governmental, non-governmental and international financing agencies for the effective implementation of the project
- Assisting in the formulation of internal regulations and forest management plans
- Providing assistance in case of potential disputes with unauthorized forest uses
- Recommending a general manager for the project with adequate capacity for the administration of the project.

Federal government stakeholders

Federal Environmental Protection Authority

The Federal Environmental Protection Authority (EPA) is an autonomous government body at the federal level responsible for environmental management and protection of the country's resources. It is responsible for:

- Negotiations of international environmental agreements and, as appropriate, initiating or causing the initiation of a process of ratification.
- Ensuring that the Kyoto protocol is ratified and necessary instruments developed.
- For activities that fall within the ambit of the Clean Development Mechanism (CDM) under the Kyoto Protocol, it is the Designated National Authority (DNA).
- Review and approve the Project Implementation Notes (PIN) and project development documents (PDD).
- Issuing a letters of approval to confirm that the proposed carbon project is in line with the country's sustainable development priorities.
- Ensuring that an environmental and social impact assessment, if required, has been conducted in accordance with the national laws and procedures put in place.

The Ministry of Agriculture and Rural Development (MoARD) and the Bureau of Agriculture and Rural Development (BoARD)

The MoARD and the BoARD, particularly the forestry department is involved in the Humbo project, since they are the agencies responsible for developing policies and laws for the development, management, and conservation of forestry resources of the country as well as for land administration and land use. The MoARD and BoARD are the one who were consulted from the beginning of project validation. At the district level it was district BoARD office that worked with WV and they remain responsible for ensuring the project monitoring, reporting and verification plans are implemented which are the basis for the sub-ERPA between Cooperatives, district BoARD office and WVE.

Regional government departments

Humbo Woreda (District) Agricultural, the Rural Development and Forestry Development Coordination Office (ARDFCO), and the BoARD office

The Humbo Woreda ARDFCO is directly responsible for forestry related issues within their jurisdiction. They are responsible for provision of technical guidance to communities through forestry extension. The ARDFCO has been involved in project development and implementation right from the stage of project identification through community consultation, establishment of carbon baselines and development of forestry management interventions. The ARDFCO is also responsible for conducting training of members of the cooperative societies in forest management aspects and development sustainable resource harvesting programs that ensure a sustainable flow of benefits to communities while improving the ecological integrity of the forest. They are also responsible to monitor carbons stock together with the community throughout the commitment period.

The Humbo Woreda Government Cooperative Office

The Woreda cooperative office is responsible for all matters related to corporative societies as mandated by Ethiopian law. The Office is accordingly required to organize communities into viable cooperative societies. This includes assisting in development of documents that establish the cooperative society such as the constitution and assisting in registration. The Cooperative office also monitors and supervises activities of the cooperative societies. The Humbo Woreda cooperative office was particularly instrumental in developing by-laws that govern the forest development cooperative societies as well as train them in institutional governance and basic financial management. The cooperative office is also expected to guide in financial management and conduct annual financial audits of the cooperative societies.

Community institutions

Community Forest Protection and Development Cooperative Societies

The community forest cooperatives are ultimately responsible for ensuring that project activities are implemented according to plan and that they deliver carbon credits. Their responsibilities are:

- To undertake forest development activities such as tree planting, thinning, pruning, weeding, guarding, etc. of the enclosed reforestation area by contributing voluntary labor in accordance with the program devised by members of the society.
- To protect and conserve the reforestation area by live fencing and/or guarding the area on a rotational basis by members selected from each sub-kebelle/kebelle (or by paid forest watchers).
- To grow seedlings by establishing nurseries and plant them when necessary.
- To conserve natural tree seedlings and replant them in open areas.
- To provide training and education to members of the society and to elected members of different committees on various aspects of forest management.
- To conduct public awareness on the benefits of cooperative organizations for the management of natural resources
- To develop sustainable development plan that benefit the whole community and implement the plan accordingly using the revenue
- Ensure the by-law is understood by the forest cooperative members and implemented accordingly

The Farmers' Forest Union

In order to bring all the cooperative societies to form one umbrella organisation, a union will be established to bring all the seven cooperative societies together. The Union will be the main link between forest cooperatives, local government, WVE and gradually with the carbon buyers. It is expected that all functions currently carried out by WVE will eventually be transferred to the Union, yet WV will continue to play an advisory role. In preparation for this role, WVE is building the capacity of the cooperatives and working closely with the zone and district level cooperative offices to ensure smooth running of activities once WV pulls out of the project by September 2012.

World Bank Biocarbon Fund

The World Bank is the carbon buyer using financial resources from the Government of Canada which approved and authorised voluntary participation of the World Bank in November 2010.

Jaco CDM Limited

Acting as a Designated Operating Entity (DOE) accredited by the UNFCCC to validate A/R-CDM projects, Jaco conducted an independent validation of the project. Jaco CDM in particular conducted a desk review of the project design document, the baseline and the monitoring plan, follow-up interviews with project stakeholders, visits during project implementation, and resolution of outstanding issues and issuance of the final validation report. Validation was performed using approved A/R CDM methodology AR-AM0003 version 04 protocol. The validation of CCBA considered the project to comply with the Gold level and hence the project was registered in December 2009.

Carbon measurement methodology

The Humbo project used the Good Practice Guidance Line for Land Use, Land Use Change and Forestry (LULUCF) IPCC default values. The carbon measurement therefore uses published information for similar climatic zones and vegetation type following an approach of combined natural regeneration and supplementary planting, biomass stock and

annual increment figures for plantations. Two carbon pools were considered, namely above ground and below ground carbon stocks. The baseline establishment and monitoring methodology used is the approved Clean Development Mechanism (CDM) methodology (AR003 version 4) - Aforestation and reforestation of degraded land through tree planting, assisted natural regeneration and control of grazing by livestock.

Roles in monitoring

A comprehensive monitoring plan for the project was developed and is a guide to project monitoring. A number of stakeholders are involved in project monitoring but it is a primary responsibility of WVE as the project developer. The following aspects are monitored as highlighted in the monitoring plan.

- Baseline GHG emissions
- Actual project boundary
- Forest establishment, including pre-existing vegetation, area planted, tree species composition and forest structure
- Forest management including all silvicultural practices carried out
- Monitoring the actual net GHG removals by sinks including establishment of baseline carbon stocks and estimating changes in carbon stocks by collecting data from permanent sample plots
- Monitoring GHG emissions by sources as the results of the A/R CDM project activity
- Monitoring leakage
- Quality assurance and quality control
- Monitoring of environmental impacts outside the project boundary
- Monitoring of socioeconomic issues

World Vision Ethiopia

WVE, as the project developer, has been a key player in designing and implementing a monitoring program that is rigorous enough to meet required standards, yet simple enough to be implemented by the communities themselves in the long-term. WVE was responsible for establishing the baseline carbon stocks and determining which carbon pools to include in the baseline and therefore the monitoring program. The carbon pool selection was determined by an available approved methodology. In addition WVE is conducting and/or facilitating training of government forestry staff and community members in forest monitoring techniques and estimation of carbon stocks. As a starting point, WVE conducted a baseline study and established permanent sample plots. These are measured on an annual basis to detect any changes in the condition of the forest as well as human activities. But during recent initial verification, WVE is asked to re-stratify the project site due to observed changes in vegetation. This is leading to re-fixing sample plots.

Forest Protection and Development Cooperative Societies

Members of the cooperatives are participating in forest monitoring through their respective forest management committees. The project adopted a participatory monitoring approach to ensure timely feedback to communities, identification, development and implementation of corrective measures.

World Bank Biocarbon Fund

As the carbon buyer, the World Bank Biocarbon Fund is interested in ensuring that the carbon credits have indeed been delivered by the project. The Bank therefore commissioned a consultant to validate the project including, among others, ensuring that the monitoring plan addresses key aspects that would assure delivery of carbon credits. It is expected that after every five years, the bank will be commissioning a verifier as part of ongoing project monitoring.

Project management capacity

Organization of project participants

Project Developer: World Vision Ethiopia and World Vision Australia

WVE and WVAU are the project developer working on behalf of all the local communities living adjacent to the project area that are now organised in seven corporative societies. In addition to funding the project, WVAU has been providing technical backstopping.

As the project developer, World Vision has undertaken a number of activities starting from project identification, generation of background information about the project area, conducting consultations with communities, government and all other partners. World Vision also helped develop the PIN and PDD, identified and engaged a carbon buyer and

has entered into an Emissions Reduction Purchase Agreement (ERPA) with the World Bank Biocarbon fund on behalf of the communities.

Project funders

The project is largely funded by WVAU through WVE. The funds have helped in meeting the upfront costs from project identification through community consultations, project development, establishment of baselines, and development of the monitoring program up to signing of the emissions reduction purchase agreement. The World Bank Biocarbon fund has also provided financial support specifically for the consultants that conducted the feasibility, validation and verification exercises and community capacity building. The Ethiopian government through relevant departments has also provided in-kind support for project development and approval as well as members of the forest protection and development cooperative societies.

Credit buyer

The carbon credit buyer is the Government of Canada through the World Bank Biocarbon Fund. The Biocarbon fund brings with it rich experience accumulated over the years working with forestry carbon projects in particular.

Government stakeholders

The Ministry of Agriculture and Rural Development (MoARD)

The MoARD, particularly the forestry department under the Vice-Minister of Natural Resources, had to be involved in the Humbo project, since it is the federal arm of the government responsible for developing policies and laws with respect to the management, development and conservation of forestry resources of the country as well as for land administration and land use. The ministry has BoARD at regional level, who is also issuing policy under the umbrella of MoARD. There are also offices at the Zonal and District levels that are responsible for all technical matters in this case forest extension and training in forest management.

Regional Bureau of Agricultural and Rural Development

The regional Agriculture and Rural Development Bureau is responsible for providing technical guidance for rural land administration and utilization in addition to developing regional focused policy as well as forest management. Under the Bureau, the Natural Resources and Rural Land Administration Department is responsible for the implementation of the rural administration and land use while the Forestry Department is responsible for forest management. The research team had a discussion with representatives of these departments who demonstrated their knowledge about the project and all the processes the project had gone through. One particular issue that was highlighted was the fact that the project had created a learning site and they were planning to upscale the interventions to all other hilly areas in their area of operation.

The Woreda Cooperative Office

The Woreda Cooperative Office has played important roles during project development in relation to the establishment of the forestry cooperative societies. They guided communities in the development and discussing of the draft bye-laws and provided technical support in finalizing the bye-laws in accordance with the Ethiopian law on cooperative societies. It is also the body that gives permission for registering the community cooperatives as legal entities.

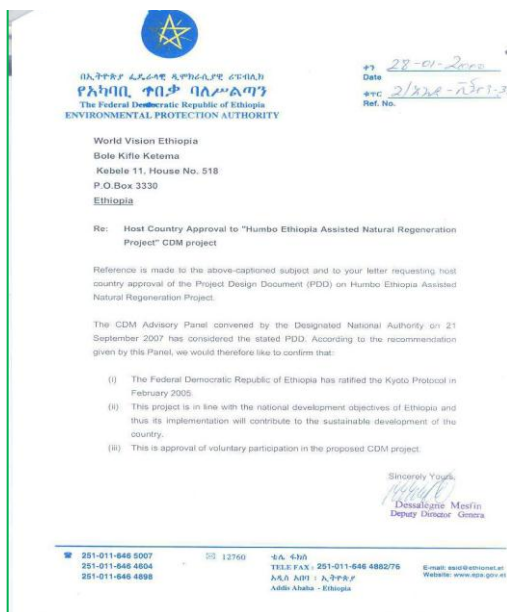
One legal requirement under the Ethiopian Cooperative law is that government audits each cooperative annually. The Woreda Cooperative Office is therefore responsible for ensuring that each cooperative manages its finances according to good finance management principles. As such each cooperative has been guided to open a bank account. In addition the cooperative officer conducts regular monitoring and supervisory visit to ensure proper management of finances for each cooperative.

The cooperative officer is also required to organise, follow up, monitor performance/growth and take remedial measures where performance is not satisfactory.

Figure 3. Participants in the February 01, 2011 meeting at the Humbo District offices. Included are government staff from forestry, agriculture, marketing, cooperative and administrative offices.



Figure 4. Letter of no objection from the EPA.



The Environmental Protection Authority (EPA)

The EPA is the national regulatory agency responsible for supervision and monitoring of all environmental matters in the country. As such the EPA is responsible for ensuring that any development project does not adversely affect the natural environment. The EPA therefore ensures that an Environmental Impact Assessment (EIA) is conducted for any project that is likely to impact on the natural environment. For this project, EPA reviewed and approved the environmental review as this project was categorised under those that would not result into adverse impacts. The EPA is also the focal point for the UNFCCC as well as the Designated National Authority and is therefore required to provide a letter of no objection for the PIN of a carbon project and a letter of approval for the PDD. EPA accordingly reviewed and provided a letter of no objection (see Figure 4) to the Humbo Assisted natural regeneration project indicating that the project would contribute to the country's sustainable development objectives.

Forest Protection and Development Cooperative Societies

To ensure sustainability, generate community ownership, enthusiasm and social benefits, user rights and local forest protection and development societies were established. These empowered the community to more sustainably manage their communal lands. The Cooperative Societies are governed by bylaws. The bylaws clearly specify objectives and activities, membership criteria, rights and duties of members, the powers, responsibilities and duties of the management bodies, the conditions of withdrawal and dismissal, the conditions for re-election, appointment; terms of service and suspension or dismissal of management committee members or other management bodies, the conditions for convening a meeting and voting procedures as well as the conditions of recruitment of workers and auditing. The bylaws of each of the seven cooperative societies have been finalized after being discussed, commented and consensus reached among the community and the concerned district (Woreda) government body through focus group discussion. The cooperatives have been exercising (applying) the bylaws since the project implementation and forest management was started.

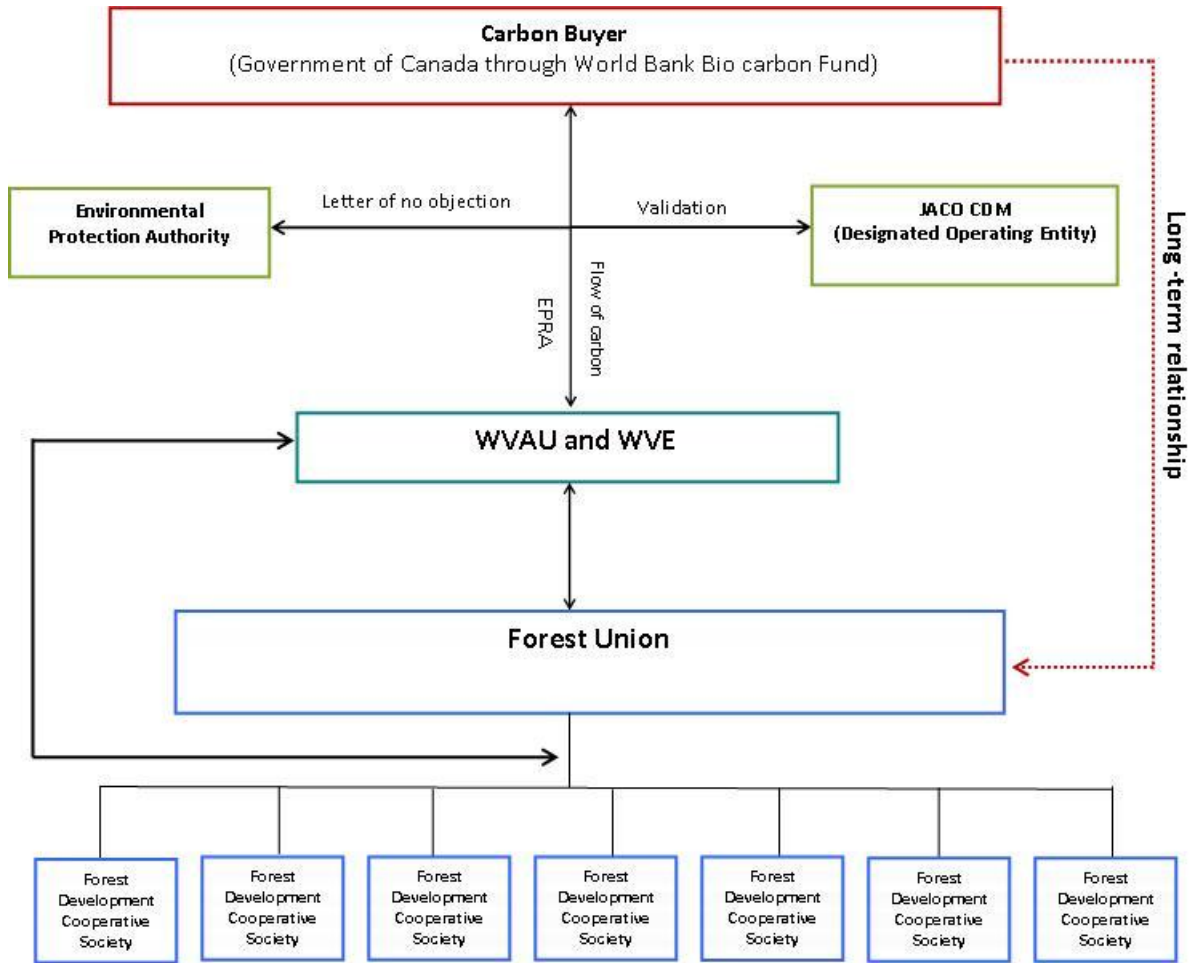
The structure of the cooperatives consists of a general assembly (the highest authority of the Association), an executive body (accountable to the general assembly) and sub-committees such as a forest protection committee, forest development committee, credit and saving committee accountable to the executive committee. Where necessary, staff is recruited for certain roles. The executive bodies and sub-committees elected by the cooperative societies have been established with the assistance of the Woreda Cooperative Office for organizational matters. This organ has provided generic model bylaws, provided advice on the contents and assisted in cooperative establishment. The generic bylaws have been adopted with appropriate modifications regarding rights and obligations, contributions to be made for use by the association on expenditures to be approved by the members, penalties to be imposed on members who might default with respect to their obligations.

The proclamation provides that the cooperative societies shall be exempt from income tax, although members shall pay income tax on their dividends. Each member of the cooperative society must contribute a share of the amount of which is to be decided by the general assembly. Although not specifically stated in the proclamation such share may be in cash or in kind.

The Forest Protection and Development Cooperative Union

The formation of the forest protection and development union is aimed at establishing an institutional structure that brings together all cooperative societies and serving as a link to external stakeholders. As a legal representative of the communities through their cooperative societies, the union would be the body ultimately responsible for delivering carbon credits to the buyers. WVE plans to hand over all its responsibilities (including the ERPA) to this body once established and properly functioning. This will be done in consultation and consent of the trustee Project management will therefore rely entirely on the management capacity of the union, and this is one of the key areas that WVE is keenly addressing. This means each cooperative is responsible for managing the forest in the respective areas. The Union will be responsible for linking and providing leadership guidance to each forest cooperative. Fortunately the leadership of the union will be drawn from the seven cooperatives whose leadership has received considerable training right from project inception. It is also hoped that the Union will be run by a team of technical professionals established as a steering committee at the district that will be able to handle technical issues including effective management of the project. Where necessary, the union may hire technical experts in accounting.

Figure 5: The Project Structure.



The project process and timeline

The project was finally registered at the UNFCCC on December 9, 2009 and it has achieved attained Gold standard accreditation by the CCB. This however could have been one of the shortest periods compared to other projects. The leadership of WVE with technical backstopping from World Vision Australia has enabled the project to progress without delay.

Table 1. Project process and timeline

Event	Date
Tony Rinaudo and Paul Dettmann, World Vision communicate on the opportunities in Carbon Sequestration for World Vision	July 2004
Paul Dettmann recommends a CDM project be undertaken in a World Vision partner country	August 2004
Ethiopia is selected as candidate country	August 2004
Tony Rinaudo and Paul Dettmann visit Humbo ADP in Ethiopia to identify suitable project site	October 2004
PIN completed for Humbo site	April 2005
PIN Submitted to BioCarbon Fund	May 2005
BioCarbon Fund requests Carbon Finance Document	June 2005
Carbon Finance Document completed	July 2005
World Bank pre-feasibility assessment	January 2006
Inclusion of project in to BioCarbon Fund	February 2006
PDD initiated	March 2006
Project inception	December 2006
Government of Ethiopia Designated National Authority (DNA) issues letter of Approval (LoA)	October 2007
PDD Completion and submission to validation	August 2008
Project Validation for CCB Validation	March 2009
Project registered as a CDM project	December 2009
Emissions Reduction Purchase Agreement Signed	2009
Government of Canada, which is a project participant approved and authorised voluntary participation of the World Bank and would receive CERs in its national registry	November 2010
First Payment disbursed/received at World Vision Ethiopia	September 2010
Project attains Gold standard under the Climate Community and Biodiversity (CCB) standards	February 2011

Project management capacity

World Vision Ethiopia

The project is managed within the framework of the WVE project management structures. The manager of the Climate Change and Environment program, within the Livelihoods stream of work is the overall technical manager and project supervisor.

Humbo Area Development Program

The project is managed at the field level through the Humbo area development program with the program coordinator at the area level responsible for coordination and supervision of project activities.

Community structure and governance

Field Technical officers

The project employs field technical officers with strong technical forestry skills who provide direct technical guidance in activity implementation including management planning, monitoring and forestry extension. Government forestry staff is also involved with technical training in forestry activities.

Community roles in project management

While WVE has been spearheading project design and implementation, the community is actively involved to ensure ownership and long-term sustainability. Initially communities were consulted and they provided their views at the project design stage. Community structures, particularly the forest protection and development cooperative societies have been established to help mobilise community input into project management. Community roles in implementing specific project interventions were clearly spelled out right from the start and they are already carting out these

functions as earlier pointed out. The deliberate effort to train community members is yet another important step that WVE has instituted to ensure that communities take on project management. Lastly, WVE is helping the cooperative societies to establish a cooperative union that is hoped to take over the project management after 2012.

Gender

Membership to the cooperative societies is open to all genders groups including men, women and the youth. Majority of members are however men, since membership is based on head of household and most households are male headed. There is a provision however to recruit youth to be members of the cooperative societies.

Women are not specifically targeted for leadership of the cooperative societies but have been advised by a project evaluation team to include them. We however established that members are appointed to sub-committees based on their knowledge and experience and this could be an opportunity for capable women and youth to be elected to leadership of the cooperative societies.

Key policy issues

During project development, a legal review was commissioned to guide project design and implementation. The following key policy aspects were considered.

Land tenure and carbon rights

In Ethiopia land belongs to the community and the government and therefore the communities participating in the project were not holding legal title to the land before the project. They did, however, hold user rights. This provision does not however stop communities from implementing a carbon project as there are provisions within the law that allow issuing of user rights. The legal study notes for example that within SNNPRS proclamation no. 53/2003 a possessory right is defined as the right any peasant or pastoral shall have to use rural land for agriculture or natural resource development activities. Based on this proclamation, the seven communities have legal user right certificates on the forest land.

The study also highlights the definition of natural resources according to the proclamation and as living things and non-living things, which are gift of nature found on the land and that this was confirmed by Legal counsel from the level of EPA, State, and Woreda natural resource management specialists that this includes rights to carbon sequestered in the forest. Once the use rights were issued, the communities gained ownership of the resources in the project area. This in effect means that the trees and all its products including the service of carbon sequestration belong to the members of the respective cooperative societies.

Based on this provision therefore, each forest cooperative society was issued with a user certificate that makes it possible for communities to access benefits from the forest including carbon rights. This was arrived at after a legal study that provided recommendations on how the issues of land and carbon rights would be handled. The study noted that at the time of project inception, the project areas was under an open access regime where all community members living adjacent were accessing the area for livestock grazing, firewood collection and charcoal making. This open access regime had led to severe resource degradation and was not sustainable in the long-term. The carbon project has therefore resulted in a regulated system with clear user rights for members of the cooperative society while at the same time establishing roles and responsibilities for sustainable resource management.

Interaction with landscape scale processes

At the landscape level, the agriculture, forestry and rural development offices were concerned with general loss of natural vegetation. Some effort to promote tree growing amongst communities had been initiated but had not been implemented to scale. Natural forest restoration had been identified as a key area to address using participatory forest management approaches that had already been piloted with some success in other areas of Ethiopia. The local authorities were however constrained with financial resources as well as overcoming the huddle of open access to forest resources particularly for livestock grazing which was severely degrading forest resources. The project has therefore provided a practical way of addressing forest degradation, and the local authorities are considering replicating the project interventions to other areas within the landscape.

Severe land degradation in the project area had led to landslides and soil erosion that had affected food production thereby impacting on food security. WVE had been implementing a food security project and forest restoration was as a successful intervention for long-term food security in the area. Landslides and soil erosion have also led to siltation of Lake Abaya downstream. The project therefore has contributed to general landscape conservation particularly land degradation, reduced lake siltation and developed a forest management approach that could be scaled up to other areas within the landscape.

Institutional challenges and solutions

Project challenges and solutions

The Humbo project like any other project is faced with a number of challenges. Some of these challenges are related to the nature of the project, the institutional arrangements, benefit sharing as well as technical aspects.

Challenge: Lack of awareness of the project within the community

Community members do not know that the carbon project exists or how it works. This can lead to resistance to the project within the community.

Solution:

A number of community consultative meetings were held that enabled the project proponents to explain project objectives and highlight the benefits that would accrue to them as a result of the project. The involvement of community leaders and elders helped to erase all the suspicions and resistance to the project.

Challenge: Development of a benefit sharing arrangement

This was a challenge between communities and within each community. There was a debate on how the carbon revenue would be shared between different cooperative societies and once the revenue reached each community, it was also not clear how the revenue would be distributed. In addition, there was also need to clarify how other benefits particularly grass for livestock feeding would be shared among community members.

Solution:

Revenue sharing between communities was resolved through establishment of internal forest boundaries for each administrative unit where elderly people helped tell where the village boundaries were located within the forest. These were then delineated using GPS points. The amount of revenue accruing to each community is then determined based on the amount of carbon sequestered within a given forest area that falls within the boundaries of a particular community.

Challenge: Establishment and functioning of community structures

The project undertook to establish and ensure that community structures are functional, carrying out their roles and responsibilities. The structures have been established but are not yet strengthened for them to carry out their functions.

Solution:

WVE staff are available to guide and train communities on managing the affairs of forestry and the cooperative union. The natural resource management department in the district is also responsible for providing any technical support to the communities on forest management activities and monitoring of data related to carbon stock measurement. The involvement of the cooperative officers ensures that government staff will be available to carry out institutional monitoring and evaluation such as helping with annual financial audits that may help improve financial management systems.

Challenge: Managing community expectations

The community expects that carbon revenue will enable them invest in a number of projects such as health units, grain milling machines, brick making to improve their livelihood and income. While the funds may actually be invested in such projects, the results may not be realized immediately due to other factors including management of these projects. While structures are in place for management of the forests, it may require setting up and strengthening of other structures for managing the new generation of projects.

Solution:

The project is training community leaders not only in forest management but also general management of community affairs including financial management. These skills if applied to other projects will help them realize the desired outcomes. In addition, WVE conducted trainings for forest cooperatives on how to develop plans to invest the revenue and accordingly each forest cooperative has developed a sustainable development plan indicating how and where the revenue transferred to their account will be utilized.

Challenge: Delays in effecting carbon payments

The community has had to wait for almost four years from project inception to receipt of carbon payments. Some community members thought that these funds would never be received.

Solution:

WVE staff has been in constant communication with community members providing them with updates on progress. The steps involved from project inception to approvals through signing of the ERPA were explained to community members from the start.

Challenge: Crop raiding by wildlife

As a result of forest restoration, wildlife numbers have come back and have started destroying farmers' crops. Farmers are not allowed to hunt them down as they are prohibited by wildlife proclamation.

Solution:

Communities guard their crops during the day. Human-Wildlife conflict interventions are being incorporated into project management. Communities have very recently been reporting that the incidence of crop attack by wildlife has been declining as the wildlife is now accessing food (wild fruits) from the restored forest.

Challenge: Limited revenue for farmers

Farmers may not be receiving sufficient revenue from carbon credits and grass to justify participation

Solution:

In addition to other benefits from the project, ecotourism is planned to attract tourists and generate additional income. The communities are now charging entrance fees from any visitors. Apiculture and harvesting of timber based were also included in the PDD as methods to realized co-benefits from the project.

Project Innovations

The project has demonstrated a number of innovative approaches particularly in its institutional architecture. The idea of forming forest cooperative societies that are imbedded within Ethiopian law was a key innovation that would ensure project growth and sustainability. The institutional framework then forms a foundation for other innovations such as ensuring participation of all eligible household in each Kebele as well as equitable sharing of project benefits. The plan by some cooperative societies to invest carbon revenue into projects such as health units and cereal milling machines will ensure that all community members share benefits particularly women and children that are vulnerable to maternal and child disease. The investment of carbon revenue in income generating activities such as brick making machines will not only provide employment to especially the youth but will contribute to poverty reduction and spur economic growth.

Project finances and equity for farmers

The project costs and benefits

Project costs

World Vision Ethiopia, with support from World Vision Australia has provided most of the funds to meet the start up costs. This has been supplemented by mainly in kind contribution from local communities and the Woreda offices responsible for forestry and cooperative issues. The total costs from tree nursery establishment and management, forest management training, project related staff costs and the establishment of the legal and socio-economic framework for running the seven cooperatives totaled US\$653,303 from 2006-2010.

Project benefits

Table 2: Sources of project finance

Sources of Finance	Amount (US\$)
World Vision Australia	653,303
Sale of carbon credits	726,000 (only from signed 165,000ER), The remaining will be sold in future
Total	1,379,303

The Community's costs and benefits

Community Costs

The participating farmers are meeting costs related mainly to their labor in put into project development and management as well as implementation of forest protection and management measures. The farmers' roles are outlined below.

- General community mobilization.
- Participation in project related community meetings and training events
- Boundary marking and maintenance.
- Patrolling for control of unauthorized use.
- Fire protection measures including establishment of fire lines and putting out the fire in case of outbreak.
- Tree nursery establishment and management
- Replanting of open areas.
- Implementation of silvicultural practices such as pruning and thinning in areas under natural regeneration to ensure good growth of trees.

It should also be noted that communities also met the opportunity cost for los access to the project area during the time when the forest was closed off for livestock grazing as the grass as growing up for cut and carry; although one would argue that the grazing was destructive in the long term and the close off was in preparation for a sustainable off take program.

Community Benefits

Community benefits were handled thoroughly during project development and mechanisms for equitable benefit sharing put in place and already being implemented. There are two major categories of community benefits out of their participation in the project. One is access and sale of forestry products and the other is from the sale of carbon credits.

One major forest product that is benefiting the community is grass mainly for fodder. Community members have developed a schedule for harvesting of grass with some being used for feeding their livestock while the extra is sold both within and outside the membership of the cooperative society. They are also collecting branches, twigs which are removed as a result of silvicultural practices such as thinning, pruning and coppice reduction as a source of fire wood. The procedure of collection is the same as that of collecting grasses, using the card system. Normally firewood collection is allowed after the materials removed as a result of pruning and thinning have been dried and leaves fall to the forest floor.

Box 1. An illustration of benefits from sale of grass for livestock feeding for Abala-Longina Forest

- Overgrazing had made the forest area bare. When project started, grazing was closed off and the grass regenerated.
- A grass harvesting system was then developed where members would harvest grass for domestic use and for sale.
- Before 2010, members would be given access cards. But in 2011, lots of grass has come up and a different strategy has been developed where each cooperative member is mobilised once a week, grass is cut and stored in one place to be sold for group income. In fact where we had meeting there was a heap of grass ready to be sold off!
- Those members that participate in weekly grass collection are then free to collect grass for their own use and sale. Members pay 2 Birr per year and are allowed to harvest grass whenever they want.
- Market for grass is available from both within and outside membership of the cooperative society including even outside the project area.
- Cooperative had sold grass worth 400 Birr.
- 50 bundles are collected per week. Each bundle goes for 3 Birr within the KA and external market pays 7-10 birr.

Protection and Development Cooperative society

The members of the communities will decide how those will be shared among the communities in line with the provisions on benefit sharing provided in the cooperative societies proclamation.

- Grass for feeding livestock
- Clean water.
- Local employment opportunities
- Capacity building – management of their affairs and sustainable forest management.
- Income from carbon sales.
- Investments of revenue from carbon sales – improvement of health units; brick making projects; cereal milling machines.
- Temporary labour opportunities
- Participation in capacity building and awareness creation events.
- Grass for fodder and house thatching.
- Firewood from pruning and thinning
- Floods that used to wash away people’s land/crops stopped.
- Boulders that used to destroy farm land stopped.
- Microenvironment improved.
- Breathe fresh air and there is moisture in the forest.
- The forest now belongs to communities – ownership/user rights.
- Wildlife that used to attack crops and livestock now have food in the forest – no longer a problem.
- Temperatures were very high and “rocks and soil would burn your feet”! Now there is grass covering the forest floor.
- Other income comes from sale of energy saving stoves, modern beehives, Oxen, Goats, chicken and capacity building in forest management.

Figure 6: A heap of grass at Abala Longina Cooperative Office ready for sale.



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